

NTP Historical Controls Report

By Route and Vehicle

Wistar-Han RATS

August 2016

REPORT DESCRIPTION

This report shows the tumor rates of control group animals from selected studies. The studies used are shown on the Study Summary page.

This report is broken up into sections based on the route and vehicle used to deliver the chemical. The Table of Contents on Page 3 shows the different Route/Vehicle combinations. To see the data from all routes and vehicles combined into one set, you must run the "All Routes" report.

The individual tumor rates shown on the data pages of the report relate to the Study Summary page as follows: the tumor rates are shown in the same order as the Study Summary page, except that they are grouped horizontally in sets of three, with the males in the first set of three and the females in the second set. For example if the study summary showed the studies like this:

Male

M1

M2

M3

M4

M5

Female

F1

F2

F3

F4

F5

the data would be shown as:

Male			Female		
M1	M2	M3	F1	F2	F3
M4	M5		F4	F5	

Directly beneath the individual tumor rates on the data pages are the overall totals for that tumor/site combination. This includes the total tumors/animals, the overall mean (in parentheses), the mean of the study means, and the standard deviation of the study means.

Studies with no control animals of a particular gender are listed on the summary page with the Number of Animals shown as zero and the Start Date and Length of Study shown as "N/A". On the data pages there are blank spaces where tumor rates for these studies would normally be found, so that the male and female rates for the remaining studies can be easily compared.

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Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: GAVAGE
Vehicle: CORN OIL

Page: 4
Report Date: 08/04/2016

Study Summary

Laboratory Name	Study Number	Study Start Date	Length of Study in Days	Number of Animals Total and (#/Cage)	Number Surviving and (Mean Life Span)	Maximum Mean Weekly Body Weight	Chemical
Male							
Southern Research Institute	052020903	08/26/08	729	49(3)	36(671)	673.4	Pentabromodiphenyl Ether Mixture [DE-71 (Technical Grade)]
Battelle Columbus Laboratory	052032003	07/25/07	727	50(3)	33(642)	662.9	Tetrabromobisphenol A
Female							
Southern Research Institute	052020903	08/26/08	732	50(5)	37(678)	389.6	Pentabromodiphenyl Ether Mixture [DE-71 (Technical Grade)]
Battelle Columbus Laboratory	052032003	07/26/07	728	50(5)	34(678)	375.2	Tetrabromobisphenol A

NOTE: The text on page 2 ("Report Description") describes how the studies listed here are displayed on the data pages that follow.

Version: Aug2016
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: Wistar-Han
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
Route: GAVAGE
Vehicle: CORN OIL

Page: 5
Report Date: 08/04/2016

Male					Female				
#All Organs: Benign Tumors									
Overall Incidence	Total	33/49 (67%) 63/99 (63.64%)	30/50 (60%) Mean 63.67%	SD 5.2%	Total	37/50 (74%) 75/100 (75%)	38/50 (76%) Mean 75%	SD 1.41%	
#All Organs: Malignant Tumors									
Overall Incidence	Total	13/49 (27%) 21/99 (21.21%)	8/50 (16%) Mean 21.27%	SD 7.45%	Total	10/50 (20%) 20/100 (20%)	10/50 (20%) Mean 20%	SD 0%	
#All Organs: Malignant and Benign Tumors									
Overall Incidence	Total	36/49 (73%) 70/99 (70.71%)	34/50 (68%) Mean 70.73%	SD 3.87%	Total	40/50 (80%) 80/100 (80%)	40/50 (80%) Mean 80%	SD 0%	
#All Organs: Hemangioma									
Overall Incidence	Total	1/49 (2%) 2/99 (2.02%)	1/50 (2%) Mean 2.02%	SD 0.03%	Total	0/50 (0%) 0/100 (0%)	0/50 (0%) Mean 0%	SD 0%	
#All Organs: Hemangiosarcoma									
Overall Incidence	Total	8/49 (16%) 11/99 (11.11%)	3/50 (6%) Mean 11.16%	SD 7.3%	Total	2/50 (4%) 4/100 (4%)	2/50 (4%) Mean 4%	SD 0%	
#All Organs: Hemangiosarcoma or Hemangioma									
Overall Incidence	Total	9/49 (18%) 13/99 (13.13%)	4/50 (8%) Mean 13.18%	SD 7.33%	Total	2/50 (4%) 4/100 (4%)	2/50 (4%) Mean 4%	SD 0%	

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: CORN OIL

Report Date: 08/04/2016

Male														Female					
#All Organs:																			
Histiocytic Sarcoma																			
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)								
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%					
#All Organs:																			
Leukemia: Lymphocytic, Monocytic, Mononuclear, or Undifferentiated																			
		1/49	(2%)	1/50	(2%)			0/50	(0%)	0/50	(0%)								
Overall Incidence	Total	2/99	(2.02%)	Mean	2.02%	SD	0.03%	Total	0/100	(0%)	Mean	0%	SD	0%					
#All Organs:																			
Malignant Lymphoma: Histiocytic, Lymphocytic, Mixed, NOS, or Undifferentiated Cell Type																			
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)								
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%					
#All Organs:																			
Mesothelioma: Benign, Malignant, NOS																			
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)								
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%					
#All Organs:																			
Mesothelioma: Malignant																			
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)								
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%					
#All Organs:																			
Osteoma																			
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)								
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%					

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: GAVAGE
Vehicle: CORN OIL

Page: 7
Report Date: 08/04/2016

Male						Female					
#All Organs: Osteosarcoma											
		0/49	(0%)	0/50	(0%)			1/50	(2%)	0/50	(0%)
Overall Incidence	Total	0/99 (0%)		Mean 0%	SD 0%		Total	1/100 (1%)		Mean 1%	SD 1.41%
.....											
#All Organs: Osteosarcoma or Osteoma											
		0/49	(0%)	0/50	(0%)			1/50	(2%)	0/50	(0%)
Overall Incidence	Total	0/99 (0%)		Mean 0%	SD 0%		Total	1/100 (1%)		Mean 1%	SD 1.41%
.....											
*Adrenal Cortex: Adenoma											
		0/49	(0%)	0/50	(0%)			1/50	(2%)	1/50	(2%)
Overall Incidence	Total	0/99 (0%)		Mean 0%	SD 0%		Total	2/100 (2%)		Mean 2%	SD 0%
.....											
*Adrenal Cortex: Carcinoma											
		1/49	(2%)	0/50	(0%)			0/50	(0%)	1/50	(2%)
Overall Incidence	Total	1/99 (1.01%)		Mean 1.02%	SD 1.44%		Total	1/100 (1%)		Mean 1%	SD 1.41%
.....											
*Adrenal Medulla: Pheochromocytoma Benign											
		0/49	(0%)	0/49	(0%)			1/50	(2%)	2/49	(4%)
Overall Incidence	Total	0/98 (0%)		Mean 0%	SD 0%		Total	3/99 (3.03%)		Mean 3.04%	SD 1.47%
.....											
*Adrenal Medulla: Pheochromocytoma Complex											
		0/49	(0%)	0/49	(0%)			1/50	(2%)	0/49	(0%)
Overall Incidence	Total	0/98 (0%)		Mean 0%	SD 0%		Total	1/99 (1.01%)		Mean 1%	SD 1.41%

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: CORN OIL

Report Date: 08/04/2016

Male						Female								
*Adrenal Medulla: Pheochromocytoma Malignant														
		1/49	(2%)	0/49	(0%)			0/50	(0%)	0/49	(0%)			
Overall Incidence	Total	1/98	(1.02%)	Mean	1.02%	SD	1.44%	Total	0/99	(0%)	Mean	0%	SD	0%
*Adrenal Medulla: Pheochromocytoma: Benign, Complex, Malignant, NOS														
		1/49	(2%)	0/49	(0%)			2/50	(4%)	2/49	(4%)			
Overall Incidence	Total	1/98	(1.02%)	Mean	1.02%	SD	1.44%	Total	4/99	(4.04%)	Mean	4.04%	SD	0.06%
#Blood Vessel: Hemangiosarcoma														
		0/49	(0%)	1/50	(2%)			0/50	(0%)	0/50	(0%)			
Overall Incidence	Total	1/99	(1.01%)	Mean	1%	SD	1.41%	Total	0/100	(0%)	Mean	0%	SD	0%
*Bone Marrow: Hemangiosarcoma														
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)			
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%
#Bone: Osteoma														
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)			
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%
#Bone: Osteosarcoma														
		0/49	(0%)	0/50	(0%)			1/50	(2%)	0/50	(0%)			
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	1/100	(1%)	Mean	1%	SD	1.41%

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: GAVAGE
Vehicle: CORN OIL

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Report Date: 08/04/2016

Male														Female					
#Bone: Osteosarcoma or Osteoma																			
		0/49	(0%)	0/50	(0%)					1/50	(2%)	0/50	(0%)						
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	1/100	(1%)	Mean	1%	SD	1.41%					
#Bone: Sarcoma																			
		0/49	(0%)	0/50	(0%)					0/50	(0%)	0/50	(0%)						
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%					
*Brain: Glioma																			
		0/49	(0%)	0/50	(0%)					0/50	(0%)	0/50	(0%)						
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%					
*Brain: Glioma Malignant																			
		1/49	(2%)	0/50	(0%)					0/50	(0%)	0/50	(0%)						
Overall Incidence	Total	1/99	(1.01%)	Mean	1.02%	SD	1.44%	Total	0/100	(0%)	Mean	0%	SD	0%					
*Brain: Granular Cell Tumor Benign																			
		1/49	(2%)	1/50	(2%)					0/50	(0%)	0/50	(0%)						
Overall Incidence	Total	2/99	(2.02%)	Mean	2.02%	SD	0.03%	Total	0/100	(0%)	Mean	0%	SD	0%					
*Brain: Granular Cell Tumor Malignant																			
		0/49	(0%)	0/50	(0%)					0/50	(0%)	0/50	(0%)						
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%					

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: CORN OIL

Report Date: 08/04/2016

		Male				Female			
*Brain: Meningioma Malignant									
		0/49	(0%)	0/50	(0%)			0/50	(0%)
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100 (0%)
								Mean	0%
								SD	0%
*Brain: Meningioma: Benign, Malignant, NOS									
		0/49	(0%)	0/50	(0%)			0/50	(0%)
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100 (0%)
								Mean	0%
								SD	0%
*Brain: Oligodendroglioma Benign									
		0/49	(0%)	0/50	(0%)			0/50	(0%)
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100 (0%)
								Mean	0%
								SD	0%
*Brain: Oligodendroglioma, Glioma, or Astrocytoma									
		1/49	(2%)	0/50	(0%)			0/50	(0%)
Overall Incidence	Total	1/99	(1.01%)	Mean	1.02%	SD	1.44%	Total	0/100 (0%)
								Mean	0%
								SD	0%
*Clitoral/Preputial Gland: Carcinoma									
		1/49	(2%)	0/50	(0%)			0/50	(0%)
Overall Incidence	Total	1/99	(1.01%)	Mean	1.02%	SD	1.44%	Total	0/99 (0%)
								Mean	0%
								SD	0%
*Clitoral/Preputial Gland: Carcinoma or Adenoma									
		1/49	(2%)	0/50	(0%)			0/50	(0%)
Overall Incidence	Total	1/99	(1.01%)	Mean	1.02%	SD	1.44%	Total	0/99 (0%)
								Mean	0%
								SD	0%

#: Denominator is number of animals necropsied

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: CORN OIL

Report Date: 08/04/2016

Male							Female							
#Intestine Small: Site Unspecified: Fibroma														
Overall Incidence	Total	1/99	1/49 (2%)	Mean	0/50 (0%)	SD	1.44%	Total	0/100	0/50 (0%)	Mean	0/50 (0%)	SD	0%
.....														
#Intestine Small: Site Unspecified: Leiomyoma														
Overall Incidence	Total	0/99	0/49 (0%)	Mean	0/50 (0%)	SD	0%	Total	0/100	0/50 (0%)	Mean	0/50 (0%)	SD	0%
.....														
#Intestine Small: Site Unspecified: Leiomyosarcoma														
Overall Incidence	Total	0/99	0/49 (0%)	Mean	0/50 (0%)	SD	0%	Total	1/100	0/50 (0%)	Mean	1/50 (2%)	SD	1.41%
.....														
*Islets, Pancreatic: Adenoma														
Overall Incidence	Total	5/99	4/49 (8%)	Mean	1/50 (2%)	SD	4.36%	Total	0/100	0/50 (0%)	Mean	0/50 (0%)	SD	0%
.....														
*Islets, Pancreatic: Carcinoma														
Overall Incidence	Total	2/99	2/49 (4%)	Mean	0/50 (0%)	SD	2.89%	Total	0/100	0/50 (0%)	Mean	0/50 (0%)	SD	0%
.....														
*Islets, Pancreatic: Carcinoma or Adenoma														
Overall Incidence	Total	7/99	6/49 (12%)	Mean	1/50 (2%)	SD	7.24%	Total	0/100	0/50 (0%)	Mean	0/50 (0%)	SD	0%

#: Denominator is number of animals necropsied

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: GAVAGE
Vehicle: CORN OIL

Male							Female							
*Kidney: Pelvis and Transitional Epithelium: Papilloma														
Overall Incidence	Total	0/49 0/99	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%	Total	0/50 0/100	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%
*Kidney: Renal Tubule: Adenoma														
Overall Incidence	Total	0/49 0/99	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%	Total	0/50 0/100	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%
*Kidney: Renal Tubule: Carcinoma														
Overall Incidence	Total	0/49 0/99	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%	Total	0/50 0/100	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%
*Kidney: Renal Tubule: Carcinoma or Adenoma														
Overall Incidence	Total	0/49 0/99	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%	Total	0/50 0/100	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%
*Kidney: Renal Tubule: Lipoma														
Overall Incidence	Total	0/49 0/99	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%	Total	0/50 0/100	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%
*Kidney: Renal Tubule: Liposarcoma														
Overall Incidence	Total	0/49 0/99	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%	Total	0/50 0/100	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: GAVAGE
Vehicle: CORN OIL

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Report Date: 08/04/2016

Male										Female					
*Liver: Cholangioma															
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)				
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%	
*Liver: Hemangioma															
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)				
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%	
*Liver: Hepatocellular Adenoma															
		3/49	(6%)	0/50	(0%)			3/50	(6%)	1/50	(2%)				
Overall Incidence	Total	3/99	(3.03%)	Mean	3.06%	SD	4.33%	Total	4/100	(4%)	Mean	4%	SD	2.83%	
*Liver: Hepatocellular Carcinoma or Hepatocellular Adenoma															
		3/49	(6%)	0/50	(0%)			3/50	(6%)	1/50	(2%)				
Overall Incidence	Total	3/99	(3.03%)	Mean	3.06%	SD	4.33%	Total	4/100	(4%)	Mean	4%	SD	2.83%	
*Liver: Hepatocellular Carcinoma, Hepatocellular Adenoma, or Hepatoblastoma															
		3/49	(6%)	0/50	(0%)			3/50	(6%)	1/50	(2%)				
Overall Incidence	Total	3/99	(3.03%)	Mean	3.06%	SD	4.33%	Total	4/100	(4%)	Mean	4%	SD	2.83%	
*Lung: Alveolar/Bronchiolar Adenoma															
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)				
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%	

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: GAVAGE
Vehicle: CORN OIL

Male						Female								
*Lung: Alveolar/Bronchiolar Carcinoma or Alveolar/Bronchiolar Adenoma														
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)			
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%
.....														
#Lymph Node: Hemangioma														
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)			
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%
.....														
#Lymph Node, Mandibular: Hemangioma														
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)			
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%
.....														
#Lymph Node, Mesenteric: Hemangioma														
		1/49	(2%)	1/50	(2%)			0/50	(0%)	0/50	(0%)			
Overall Incidence	Total	2/99	(2.02%)	Mean	2.02%	SD	0.03%	Total	0/100	(0%)	Mean	0%	SD	0%
.....														
#Lymph Node, Mesenteric: Hemangiosarcoma														
		7/49	(14%)	1/50	(2%)			2/50	(4%)	1/50	(2%)			
Overall Incidence	Total	8/99	(8.08%)	Mean	8.14%	SD	8.69%	Total	3/100	(3%)	Mean	3%	SD	1.41%
.....														
#Mammary Gland: Adenoma														
		0/49	(0%)	0/50	(0%)			0/50	(0%)	4/50	(8%)			
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	4/100	(4%)	Mean	4%	SD	5.66%

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Aug2016
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: Wistar-Han
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
Route: GAVAGE
Vehicle: CORN OIL

Page: 16
Report Date: 08/04/2016

Male						Female						
#Mammary Gland: Carcinoma												
Overall Incidence	Total	0/49	(0%)	0/50	(0%)	SD 0%	Total	1/50	(2%)	1/50	(2%)	SD 0%
		0/99	(0%)	Mean 0%	Mean 2%							

#Mammary Gland: Carcinoma or Adenoma												
Overall Incidence	Total	0/49	(0%)	0/50	(0%)	SD 0%	Total	1/50	(2%)	4/50	(8%)	SD 4.24%
		0/99	(0%)	Mean 0%	Mean 5%							

#Mammary Gland: Fibroadenoma												
Overall Incidence	Total	0/49	(0%)	1/50	(2%)	SD 1.41%	Total	9/50	(18%)	8/50	(16%)	SD 1.41%
		1/99	(1.01%)	Mean 1%	Mean 17%							

#Mammary Gland: Fibroma, Fibroadenoma or Adenoma												
Overall Incidence	Total	0/49	(0%)	1/50	(2%)	SD 1.41%	Total	9/50	(18%)	12/50	(24%)	SD 4.24%
		1/99	(1.01%)	Mean 1%	Mean 21%							

#Mammary Gland: Fibroma, Fibroadenoma, Carcinoma, or Adenoma												
Overall Incidence	Total	0/49	(0%)	1/50	(2%)	SD 1.41%	Total	10/50	(20%)	12/50	(24%)	SD 2.83%
		1/99	(1.01%)	Mean 1%	Mean 22%							

#Mesentery: Hemangiosarcoma												
Overall Incidence	Total	0/49	(0%)	0/50	(0%)	SD 0%	Total	0/50	(0%)	0/50	(0%)	SD 0%
		0/99	(0%)	Mean 0%	Mean 0%							

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: GAVAGE
Vehicle: CORN OIL

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Report Date: 08/04/2016

Male						Female						
#Mesentery: Lipoma												
Overall Incidence	Total	1/49 1/99 (1.01%)	(2%)	0/50 Mean 1.02%	(0%)	SD 1.44%	Total	0/50 0/100 (0%)	(0%)	0/50 Mean 0%	(0%)	SD 0%
#Mesentery: Schwannoma Malignant												
Overall Incidence	Total	0/49 0/99 (0%)	(0%)	0/50 Mean 0%	(0%)	SD 0%	Total	0/50 0/100 (0%)	(0%)	0/50 Mean 0%	(0%)	SD 0%
*Nose: Adenoma												
Overall Incidence	Total	0/49 0/99 (0%)	(0%)	0/50 Mean 0%	(0%)	SD 0%	Total	0/50 0/100 (0%)	(0%)	0/50 Mean 0%	(0%)	SD 0%
*Nose: Chondroma												
Overall Incidence	Total	0/49 0/99 (0%)	(0%)	0/50 Mean 0%	(0%)	SD 0%	Total	1/50 1/100 (1%)	(2%)	0/50 Mean 1%	(0%)	SD 1.41%
*Nose: Olfactory Neuroblastoma												
Overall Incidence	Total	0/49 0/99 (0%)	(0%)	0/50 Mean 0%	(0%)	SD 0%	Total	0/50 1/100 (1%)	(0%)	1/50 Mean 1%	(2%)	SD 1.41%
#Oral Cavity (Oral Mucosa, Tongue, Pharynx, Tooth, Gingiva): Squamous Cell Carcinoma												
Overall Incidence	Total	0/49 0/99 (0%)	(0%)	0/50 Mean 0%	(0%)	SD 0%	Total	0/50 0/100 (0%)	(0%)	0/50 Mean 0%	(0%)	SD 0%

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: CORN OIL

Report Date: 08/04/2016

Male						Female						
#Oral Cavity (Oral Mucosa, Tongue, Pharynx, Tooth, Gingiva): Squamous Cell Carcinoma, Papilloma Squamous, or Papilloma												
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)	
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean 0%	SD 0%

#Oral Mucosa: Squamous Cell Carcinoma												
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)	
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean 0%	SD 0%

*Ovary: Adenoma												
								0/50	(0%)	0/50	(0%)	
Overall Incidence								Total	0/100	(0%)	Mean 0%	SD 0%

*Ovary: Cystadenoma												
								0/50	(0%)	0/50	(0%)	
Overall Incidence								Total	0/100	(0%)	Mean 0%	SD 0%

*Ovary: Granulosa Cell Tumor Benign												
								1/50	(2%)	0/50	(0%)	
Overall Incidence								Total	1/100	(1%)	Mean 1%	SD 1.41%

*Ovary: Granulosa Cell Tumor Malignant												
								1/50	(2%)	1/50	(2%)	
Overall Incidence								Total	2/100	(2%)	Mean 2%	SD 0%

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: CORN OIL

Report Date: 08/04/2016

Male						Female					
*Ovary: Granulosa Cell Tumor: Benign, Malignant, NOS											
		2/50 (4%)				1/50 (2%)					
Overall Incidence	Total	3/100 (3%)		Mean	3%		SD	1.41%			
<hr/>											
*Ovary: Granulosa-Theca Tumor Malignant											
		0/50 (0%)				0/50 (0%)					
Overall Incidence	Total	0/100 (0%)		Mean	0%		SD	0%			
<hr/>											
*Ovary: Sex Cord Stromal Tumor, Benign											
		0/50 (0%)				2/50 (4%)					
Overall Incidence	Total	2/100 (2%)		Mean	2%		SD	2.83%			
<hr/>											
*Ovary: Tubulostromal Adenoma											
		0/50 (0%)				0/50 (0%)					
Overall Incidence	Total	0/100 (0%)		Mean	0%		SD	0%			
<hr/>											
*Pancreas: Adenoma											
		1/46 (2%)		1/50 (2%)				0/50 (0%)		0/50 (0%)	
Overall Incidence	Total	2/96 (2.08%)		Mean	2.09%		SD	0.12%	Total	0/100 (0%)	Mean 0% SD 0%
<hr/>											
*Pancreas: Carcinoma or Adenoma											
		1/46 (2%)		1/50 (2%)				0/50 (0%)		0/50 (0%)	
Overall Incidence	Total	2/96 (2.08%)		Mean	2.09%		SD	0.12%	Total	0/100 (0%)	Mean 0% SD 0%

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: CORN OIL

Report Date: 08/04/2016

Male										Female				
*Parathyroid Gland: Adenoma														
Overall Incidence	Total	2/47 (4%)	0/45 (0%)	Mean	2.13%	SD	3.01%	Total	1/49 (2%)	0/48 (0%)	Mean	1.02%	SD	1.44%
*Pituitary Gland: Pars Distalis or Unspecified Site: Adenoma														
Overall Incidence	Total	19/49 (39%)	21/50 (42%)	Mean	40.39%	SD	2.28%	Total	23/50 (46%)	21/50 (42%)	Mean	44%	SD	2.83%
*Pituitary Gland: Pars Distalis or Unspecified Site: Carcinoma														
Overall Incidence	Total	0/49 (0%)	0/50 (0%)	Mean	0%	SD	0%	Total	0/50 (0%)	0/50 (0%)	Mean	0%	SD	0%
*Pituitary Gland: Pars Distalis or Unspecified Site: Carcinoma or Adenoma														
Overall Incidence	Total	19/49 (39%)	21/50 (42%)	Mean	40.39%	SD	2.28%	Total	23/50 (46%)	21/50 (42%)	Mean	44%	SD	2.83%
*Pituitary Gland: Pars Intermedia: Adenoma														
Overall Incidence	Total	0/49 (0%)	2/50 (4%)	Mean	2%	SD	2.83%	Total	1/50 (2%)	4/50 (8%)	Mean	5%	SD	4.24%
*Pituitary Gland: Pars Intermedia: Carcinoma or Adenoma														
Overall Incidence	Total	0/49 (0%)	2/50 (4%)	Mean	2%	SD	2.83%	Total	1/50 (2%)	4/50 (8%)	Mean	5%	SD	4.24%

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: CORN OIL

Report Date: 08/04/2016

Male										Female			
*Prostate: Adenoma													
Overall Incidence	Total	0/49 0/99	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%						
*Prostate: Carcinoma													
Overall Incidence	Total	0/49 0/99	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%						
*Prostate: Carcinoma or Adenoma													
Overall Incidence	Total	0/49 0/99	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%						
*Salivary Glands: Adenoma													
Overall Incidence	Total	1/46 1/96	(2%) (1.04%)	0/50 Mean	(0%) 1.09%	SD	1.54%	Total	0/50 0/100	(0%) (0%)	0/50 Mean	(0%) 0%	SD 0%
*Salivary Glands: Carcinoma													
Overall Incidence	Total	0/46 0/96	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%	Total	1/50 1/100	(2%) (1%)	0/50 Mean	(0%) 1%	SD 1.41%
*Salivary Glands: Carcinoma or Adenoma													
Overall Incidence	Total	1/46 1/96	(2%) (1.04%)	0/50 Mean	(0%) 1.09%	SD	1.54%	Total	1/50 1/100	(2%) (1%)	0/50 Mean	(0%) 1%	SD 1.41%

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: CORN OIL

Report Date: 08/04/2016

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: CORN OIL

Report Date: 08/04/2016

Male										Female						
#Skin:																
Basal Cell Adenoma or Basosquamous Tumor Benign																
		1/49	(2%)	2/50	(4%)						1/50	(2%)	0/50	(0%)		
Overall Incidence	Total	3/99	(3.03%)	Mean	3.02%	SD	1.39%			Total	1/100	(1%)	Mean	1%	SD	1.41%
#Skin:																
Basal Cell Adenoma, Basosquamous Tumor Benign, or Trichoepithelioma																
		1/49	(2%)	2/50	(4%)						1/50	(2%)	0/50	(0%)		
Overall Incidence	Total	3/99	(3.03%)	Mean	3.02%	SD	1.39%			Total	1/100	(1%)	Mean	1%	SD	1.41%
#Skin:																
Basal Cell Carcinoma																
		0/49	(0%)	1/50	(2%)						0/50	(0%)	0/50	(0%)		
Overall Incidence	Total	1/99	(1.01%)	Mean	1%	SD	1.41%			Total	0/100	(0%)	Mean	0%	SD	0%
#Skin:																
Basal Cell Carcinoma or Basosquamous Tumor (malignant or NOS)																
		0/49	(0%)	1/50	(2%)						0/50	(0%)	0/50	(0%)		
Overall Incidence	Total	1/99	(1.01%)	Mean	1%	SD	1.41%			Total	0/100	(0%)	Mean	0%	SD	0%
#Skin:																
Basal Cell Carcinoma, Basal Cell Adenoma, Basosquamous Tumor (benign, malignant or NOS), or Trichoepithelioma																
		1/49	(2%)	2/50	(4%)						1/50	(2%)	0/50	(0%)		
Overall Incidence	Total	3/99	(3.03%)	Mean	3.02%	SD	1.39%			Total	1/100	(1%)	Mean	1%	SD	1.41%
#Skin:																
Basal or Sq. Cell Carcinoma, Carcinoma, Basosq. Tumor (M or B), Basal Cell Adenoma, Adenoma, Papilloma, Sq Papilloma, Keratoacanthoma, Trichoepithelioma																
		3/49	(6%)	7/50	(14%)						1/50	(2%)	0/50	(0%)		
Overall Incidence	Total	10/99	(10.1%)	Mean	10.06%	SD	5.57%			Total	1/100	(1%)	Mean	1%	SD	1.41%

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: GAVAGE

Vehicle: CORN OIL

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Report Date: 08/04/2016

Male										Female					
#Skin: Fibroma															
		1/49	(2%)	0/50	(0%)			0/50	(0%)	0/50	(0%)				
Overall Incidence	Total	1/99	(1.01%)	Mean	1.02%	SD	1.44%	Total	0/100	(0%)	Mean	0%	SD	0%	
.....															
#Skin: Fibroma, Fibrosarcoma, Sarcoma, Myxoma, Myxosarcoma, or Fibrous Histiocytoma															
		1/49	(2%)	0/50	(0%)			0/50	(0%)	0/50	(0%)				
Overall Incidence	Total	1/99	(1.01%)	Mean	1.02%	SD	1.44%	Total	0/100	(0%)	Mean	0%	SD	0%	
.....															
#Skin: Fibrosarcoma															
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)				
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%	
.....															
#Skin: Fibrosarcoma, Sarcoma, Myxosarcoma, or Fibrous Histiocytoma															
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)				
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%	
.....															
#Skin: Fibrous Histiocytoma															
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)				
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%	
.....															
#Skin: Hamartoma															
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)				
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%	

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Aug2016
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: Wistar-Han
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
Route: GAVAGE
Vehicle: CORN OIL

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Report Date: 08/04/2016

Male						Female								
#Skin: Hemangiosarcoma														
		0/49	(0%)	0/50	(0%)			0/50	(0%)	1/50	(2%)			
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	1/100	(1%)	Mean	1%	SD	1.41%
.....														
#Skin: Keratoacanthoma														
		2/49	(4%)	4/50	(8%)			0/50	(0%)	0/50	(0%)			
Overall Incidence	Total	6/99	(6.06%)	Mean	6.04%	SD	2.77%	Total	0/100	(0%)	Mean	0%	SD	0%
.....														
#Skin: Lipoma														
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)			
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%
.....														
#Skin: Liposarcoma														
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)			
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%
.....														
#Skin: Myxoma														
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)			
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%
.....														
#Skin: Neurofibrosarcoma or Schwannoma (malignant or NOS)														
		0/49	(0%)	2/50	(4%)			0/50	(0%)	0/50	(0%)			
Overall Incidence	Total	2/99	(2.02%)	Mean	2%	SD	2.83%	Total	0/100	(0%)	Mean	0%	SD	0%
.....														

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Male						Female					
#Skin:											
Neurofibrosarcoma, Neurofibroma, or Schwannoma (benign, malignant or NOS)											
		0/49	(0%)	2/50	(4%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	2/99	(2.02%)	Mean 2%	SD 2.83%	Total	0/100	(0%)	Mean 0%	SD 0%	
#Skin:											
Schwannoma Malignant											
		0/49	(0%)	2/50	(4%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	2/99	(2.02%)	Mean 2%	SD 2.83%	Total	0/100	(0%)	Mean 0%	SD 0%	
#Skin:											
Squamous Cell Carcinoma											
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	0/99	(0%)	Mean 0%	SD 0%	Total	0/100	(0%)	Mean 0%	SD 0%	
#Skin:											
Squamous Cell Carcinoma, Basal Cell Carcinoma, Basosquamous Tumor (malignant or NOS), or Carcinoma											
		0/49	(0%)	1/50	(2%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/99	(1.01%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%	SD 0%	
#Skin:											
Squamous Cell Papilloma											
		0/49	(0%)	1/50	(2%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/99	(1.01%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%	SD 0%	
#Skin:											
Squamous Cell Papilloma or Papilloma											
		0/49	(0%)	1/50	(2%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/99	(1.01%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%	SD 0%	

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: CORN OIL

Report Date: 08/04/2016

Male						Female								
#Skin:														
Squamous Cell Papilloma, Papilloma, Squamous Cell Carcinoma or Keratoacanthoma														
		2/49	(4%)	5/50	(10%)			0/50	(0%)	0/50	(0%)			
Overall Incidence	Total	7/99	(7.07%)	Mean	7.04%	SD	4.18%	Total	0/100	(0%)	Mean	0%	SD	0%
.....														
#Skin:														
Squamous Cell Papilloma, Papilloma, or Keratoacanthoma														
		2/49	(4%)	5/50	(10%)			0/50	(0%)	0/50	(0%)			
Overall Incidence	Total	7/99	(7.07%)	Mean	7.04%	SD	4.18%	Total	0/100	(0%)	Mean	0%	SD	0%
.....														
#Skin: Sebaceous Gland:														
Adenoma														
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)			
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%
.....														
#Skin: Sebaceous Gland:														
Carcinoma or Adenoma														
		0/49	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)			
Overall Incidence	Total	0/99	(0%)	Mean	0%	SD	0%	Total	0/100	(0%)	Mean	0%	SD	0%
.....														
*Spleen:														
Hemangiosarcoma														
		1/47	(2%)	1/50	(2%)			0/50	(0%)	0/50	(0%)			
Overall Incidence	Total	2/97	(2.06%)	Mean	2.06%	SD	0.09%	Total	0/100	(0%)	Mean	0%	SD	0%
.....														
#Stomach, Forestomach:														
Fibrosarcoma														
		1/49	(2%)	0/50	(0%)			0/50	(0%)	0/50	(0%)			
Overall Incidence	Total	1/99	(1.01%)	Mean	1.02%	SD	1.44%	Total	0/100	(0%)	Mean	0%	SD	0%

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: CORN OIL

Report Date: 08/04/2016

		Male						Female						
#Stomach, Forestomach: Leiomyoma														
Overall Incidence	Total	0/49 0/99	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%	Total	0/50 0/100	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%
#Stomach, Forestomach: Leiomyosarcoma														
Overall Incidence	Total	0/49 0/99	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%	Total	0/50 0/100	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%
#Stomach, Forestomach: Sarcoma														
Overall Incidence	Total	0/49 0/99	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%	Total	0/50 0/100	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%
#Stomach, Forestomach: Squamous Cell Carcinoma														
Overall Incidence	Total	0/49 0/99	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%	Total	0/50 0/100	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%
#Stomach, Forestomach: Squamous Cell Carcinoma or Papilloma Squamous														
Overall Incidence	Total	1/49 1/99	(2%) (1.01%)	0/50 Mean	(0%) 1.02%	SD	1.44%	Total	0/50 0/100	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%
#Stomach, Forestomach: Squamous Cell Papilloma														
Overall Incidence	Total	1/49 1/99	(2%) (1.01%)	0/50 Mean	(0%) 1.02%	SD	1.44%	Total	0/50 0/100	(0%) (0%)	0/50 Mean	(0%) 0%	SD	0%

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: GAVAGE
Vehicle: CORN OIL

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Report Date: 08/04/2016

Male							Female					
#Stomach, Glandular: Fibrosarcoma												
Overall Incidence	Total	1/49 1/99 (1.01%)	(2%)	0/50 Mean 1.02%	(0%)	SD 1.44%	Total	0/50 0/100 (0%)	(0%)	0/50 Mean 0%	(0%)	SD 0%
#Stomach, Glandular: Leiomyosarcoma												
Overall Incidence	Total	0/49 0/99 (0%)	(0%)	0/50 Mean 0%	(0%)	SD 0%	Total	0/50 1/100 (1%)	(0%)	1/50 Mean 1%	(2%)	SD 1.41%
#Stomach, Glandular: Sarcoma												
Overall Incidence	Total	0/49 0/99 (0%)	(0%)	0/50 Mean 0%	(0%)	SD 0%	Total	0/50 0/100 (0%)	(0%)	0/50 Mean 0%	(0%)	SD 0%
*Testes: Adenoma												
Overall Incidence	Total	2/49 2/99 (2.02%)	(4%)	0/50 Mean 2.04%	(0%)	SD 2.89%						
*Testes: Hemangiosarcoma												
Overall Incidence	Total	0/49 0/99 (0%)	(0%)	0/50 Mean 0%	(0%)	SD 0%						
*Thymus: Sarcoma												
Overall Incidence	Total	0/45 0/94 (0%)	(0%)	0/49 Mean 0%	(0%)	SD 0%	Total	0/50 1/100 (1%)	(0%)	1/50 Mean 1%	(2%)	SD 1.41%

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: CORN OIL

Report Date: 08/04/2016

Male						Female						
*Thymus:												
Thymoma Benign												
		0/45	(0%)	1/49	(2%)			0/50	(0%)	1/50	(2%)	
Overall Incidence	Total	1/94	(1.06%)	Mean	1.02%	SD	1.44%	Total	1/100	(1%)	Mean 1%	SD 1.41%

*Thymus:												
Thymoma: Benign, Malignant, NOS												
		0/45	(0%)	1/49	(2%)			0/50	(0%)	1/50	(2%)	
Overall Incidence	Total	1/94	(1.06%)	Mean	1.02%	SD	1.44%	Total	1/100	(1%)	Mean 1%	SD 1.41%

*Thyroid Gland:												
Carcinoma												
		0/45	(0%)	0/50	(0%)			0/45	(0%)	0/50	(0%)	
Overall Incidence	Total	0/95	(0%)	Mean	0%	SD	0%	Total	0/95	(0%)	Mean 0%	SD 0%

*Thyroid Gland: C-Cell:												
Adenoma												
		11/45	(24%)	5/50	(10%)			7/45	(16%)	7/50	(14%)	
Overall Incidence	Total	16/95	(16.84%)	Mean	17.22%	SD	10.21%	Total	14/95	(14.74%)	Mean 14.78%	SD 1.1%

*Thyroid Gland: C-Cell:												
Carcinoma												
		0/45	(0%)	0/50	(0%)			0/45	(0%)	0/50	(0%)	
Overall Incidence	Total	0/95	(0%)	Mean	0%	SD	0%	Total	0/95	(0%)	Mean 0%	SD 0%

*Thyroid Gland: C-Cell:												
Carcinoma or Adenoma												
		11/45	(24%)	5/50	(10%)			7/45	(16%)	7/50	(14%)	
Overall Incidence	Total	16/95	(16.84%)	Mean	17.22%	SD	10.21%	Total	14/95	(14.74%)	Mean 14.78%	SD 1.1%

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: CORN OIL

Report Date: 08/04/2016

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: GAVAGE
Vehicle: CORN OIL

	Male			Female	
#Uterus: Carcinoma					
Overall Incidence	Total	1/50 (2%) 4/100 (4%)	3/50 (6%) Mean 4%	SD 2.83%	
#Uterus: Granular Cell Tumor Benign					
Overall Incidence	Total	1/50 (2%) 1/100 (1%)	0/50 (0%) Mean 1%	SD 1.41%	
#Uterus: Hemangiosarcoma					
Overall Incidence	Total	0/50 (0%) 0/100 (0%)	0/50 (0%) Mean 0%	SD 0%	
#Uterus: Leiomyosarcoma					
Overall Incidence	Total	0/50 (0%) 0/100 (0%)	0/50 (0%) Mean 0%	SD 0%	
#Uterus: Malignant Mixed Mullerian Tumor					
Overall Incidence	Total	1/50 (2%) 1/100 (1%)	0/50 (0%) Mean 1%	SD 1.41%	
#Uterus: Polyp Stromal					
Overall Incidence	Total	3/50 (6%) 5/100 (5%)	2/50 (4%) Mean 5%	SD 1.41%	
*: Denominator is number of animals with tissues examined microscopically					
#: Denominator is number of animals necropsied					

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: GAVAGE
Vehicle: CORN OIL

	Male			Female	
#Uterus: Sarcoma Stromal					
		0/50 (0%)		0/50 (0%)	
Overall Incidence	Total	0/100 (0%)		Mean 0%	SD 0%
#Uterus: Sarcoma Stromal or Polyp Stromal					
		3/50 (6%)		2/50 (4%)	
Overall Incidence	Total	5/100 (5%)		Mean 5%	SD 1.41%
#Uterus: Schwannoma Malignant					
		1/50 (2%)		0/50 (0%)	
Overall Incidence	Total	1/100 (1%)		Mean 1%	SD 1.41%
#Uterus: Squamous Cell Papilloma					
		0/50 (0%)		0/50 (0%)	
Overall Incidence	Total	0/100 (0%)		Mean 0%	SD 0%
#Vagina: Fibrosarcoma					
		0/50 (0%)		0/50 (0%)	
Overall Incidence	Total	0/100 (0%)		Mean 0%	SD 0%
#Vagina: Leiomyoma					
		0/50 (0%)		1/50 (2%)	
Overall Incidence	Total	1/100 (1%)		Mean 1%	SD 1.41%
*: Denominator is number of animals with tissues examined microscopically					
#: Denominator is number of animals necropsied					

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: GAVAGE
Vehicle: CORN OIL

Male						Female					
#Vagina: Polyp											
Overall Incidence						Total	0/50 0/100	(0%) (0%)	0/50 Mean	(0%) 0%	SD 0%
#Zymbal's Gland: Carcinoma											
Overall Incidence						Total	0/49 0/99	(0%) (0%)	0/50 Mean	(0%) 0%	SD 0%
#Zymbal's Gland: Carcinoma or Adenoma											
Overall Incidence						Total	0/49 0/99	(0%) (0%)	0/50 Mean	(0%) 0%	SD 0%

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: GAVAGE
Vehicle: WATER

Page: 35
Report Date: 08/04/2016

Study Summary

Laboratory Name	Study Number	Study Start Date	Length of Study in Days	Number of Animals Total and (#/Cage)	Number Surviving and (Mean Life Span)	Maximum Mean Weekly Body Weight	Chemical
Male							
Battelle Columbus Laboratory	052020303	07/18/07	727	50(3)	35(687)	632.7	Green Tea Extract
Female							
Battelle Columbus Laboratory	052020303	07/19/07	729	50(5)	26(671)	369.7	Green Tea Extract

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: GAVAGE

Vehicle: WATER

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Report Date: 08/04/2016

Male					Female				
#All Organs: Histiocytic Sarcoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
#All Organs: Leukemia: Lymphocytic, Monocytic, Mononuclear, or Undifferentiated									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
#All Organs: Malignant Lymphoma: Histiocytic, Lymphocytic, Mixed, NOS, or Undifferentiated Cell Type									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	1/50 (2%)	Mean 2%	SD 0%	
#All Organs: Mesothelioma: Benign, Malignant, NOS									
Overall Incidence	Total	2/50 (4%)	Mean 4%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
#All Organs: Mesothelioma: Malignant									
Overall Incidence	Total	2/50 (4%)	Mean 4%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
#All Organs: Osteoma									
Overall Incidence	Total	1/50 (2%)	Mean 2%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: WATER

Report Date: 08/04/2016

Male					Female				
#All Organs: Osteosarcoma									
Overall Incidence	Total	1/50 (2%)	Mean 2%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
#All Organs: Osteosarcoma or Osteoma									
Overall Incidence	Total	2/50 (4%)	Mean 4%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
*Adrenal Cortex: Adenoma									
Overall Incidence	Total	1/50 (2%)	Mean 2%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
*Adrenal Cortex: Carcinoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
*Adrenal Medulla: Pheochromocytoma Benign									
Overall Incidence	Total	1/50 (2%)	Mean 2%	SD 0%	Total	1/50 (2%)	Mean 2%	SD 0%	
*Adrenal Medulla: Pheochromocytoma Complex									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: GAVAGE

Vehicle: WATER

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Report Date: 08/04/2016

Male					Female				
*Adrenal Medulla: Pheochromocytoma Malignant									
		0/50	(0%)			0/50	(0%)		
Overall Incidence	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
*Adrenal Medulla: Pheochromocytoma: Benign, Complex, Malignant, NOS									
		1/50	(2%)			1/50	(2%)		
Overall Incidence	Total	1/50	(2%)	Mean 2%	SD 0%	Total	1/50	(2%)	Mean 2% SD 0%
#Blood Vessel: Hemangiosarcoma									
		0/50	(0%)			0/50	(0%)		
Overall Incidence	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
*Bone Marrow: Hemangiosarcoma									
		0/50	(0%)			0/50	(0%)		
Overall Incidence	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
#Bone: Osteoma									
		1/50	(2%)			0/50	(0%)		
Overall Incidence	Total	1/50	(2%)	Mean 2%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
#Bone: Osteosarcoma									
		1/50	(2%)			0/50	(0%)		
Overall Incidence	Total	1/50	(2%)	Mean 2%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: GAVAGE

Vehicle: WATER

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Report Date: 08/04/2016

Male					Female				
#Bone: Osteosarcoma or Osteoma									
Overall Incidence	Total	2/50 (4%)	Mean 4%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
#Bone: Sarcoma									
Overall Incidence	Total	1/50 (2%)	Mean 2%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
*Brain: Glioma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
*Brain: Glioma Malignant									
Overall Incidence	Total	1/50 (2%)	Mean 2%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
*Brain: Granular Cell Tumor Benign									
Overall Incidence	Total	2/50 (4%)	Mean 4%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
*Brain: Granular Cell Tumor Malignant									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: WATER

Report Date: 08/04/2016

Male					Female				
*Brain: Meningioma Malignant									
Overall Incidence	Total	0/50 0/50 (0%)	Mean 0%	SD 0%	Total	0/50 0/50 (0%)	Mean 0%	SD 0%	
*Brain: Meningioma: Benign, Malignant, NOS									
Overall Incidence	Total	0/50 0/50 (0%)	Mean 0%	SD 0%	Total	0/50 0/50 (0%)	Mean 0%	SD 0%	
*Brain: Oligodendroglioma Benign									
Overall Incidence	Total	0/50 0/50 (0%)	Mean 0%	SD 0%	Total	0/50 0/50 (0%)	Mean 0%	SD 0%	
*Brain: Oligodendroglioma, Glioma, or Astrocytoma									
Overall Incidence	Total	1/50 1/50 (2%)	Mean 2%	SD 0%	Total	0/50 0/50 (0%)	Mean 0%	SD 0%	
*Clitoral/Preputial Gland: Carcinoma									
Overall Incidence	Total	1/50 1/50 (2%)	Mean 2%	SD 0%	Total	0/49 0/49 (0%)	Mean 0%	SD 0%	
*Clitoral/Preputial Gland: Carcinoma or Adenoma									
Overall Incidence	Total	1/50 1/50 (2%)	Mean 2%	SD 0%	Total	0/49 0/49 (0%)	Mean 0%	SD 0%	

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

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Report Date: 08/04/2016

Route: GAVAGE

Vehicle: WATER

Male					Female				
*Heart: Schwannoma Benign									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
*Heart: Schwannoma NOS									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
#Intestine Small: Duodenum: Fibroma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
#Intestine Small: Duodenum: Leiomyosarcoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
#Intestine Small: Jejunum: Leiomyoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
#Intestine Small: Jejunum: Leiomyosarcoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	1/50 (2%)	Mean 2%	SD 0%	

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Page: 43

Report Date: 08/04/2016

Route: GAVAGE

Vehicle: WATER

Male					Female				
#Intestine Small: Site Unspecified: Fibroma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
#Intestine Small: Site Unspecified: Leiomyoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
#Intestine Small: Site Unspecified: Leiomyosarcoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	1/50 (2%)	Mean 2%	SD 0%	
*Islets, Pancreatic: Adenoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
*Islets, Pancreatic: Carcinoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
*Islets, Pancreatic: Carcinoma or Adenoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: WATER

Report Date: 08/04/2016

Male						Female						
*Kidney: Pelvis and Transitional Epithelium: Papilloma												
Overall Incidence	Total	0/50 (0%)	Mean	0%	SD	0%	Total	0/50 (0%)	Mean	0%	SD	0%
*Kidney: Renal Tubule: Adenoma												
Overall Incidence	Total	0/50 (0%)	Mean	0%	SD	0%	Total	0/50 (0%)	Mean	0%	SD	0%
*Kidney: Renal Tubule: Carcinoma												
Overall Incidence	Total	0/50 (0%)	Mean	0%	SD	0%	Total	0/50 (0%)	Mean	0%	SD	0%
*Kidney: Renal Tubule: Carcinoma or Adenoma												
Overall Incidence	Total	0/50 (0%)	Mean	0%	SD	0%	Total	0/50 (0%)	Mean	0%	SD	0%
*Kidney: Renal Tubule: Lipoma												
Overall Incidence	Total	0/50 (0%)	Mean	0%	SD	0%	Total	1/50 (2%)	Mean	2%	SD	0%
*Kidney: Renal Tubule: Liposarcoma												
Overall Incidence	Total	1/50 (2%)	Mean	2%	SD	0%	Total	0/50 (0%)	Mean	0%	SD	0%

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

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Report Date: 08/04/2016

Route: GAVAGE

Vehicle: WATER

Male					Female				
*Liver: Cholangioma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
*Liver: Hemangioma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
*Liver: Hepatocellular Adenoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	1/50 (2%)	Mean 2%	SD 0%	
*Liver: Hepatocellular Carcinoma or Hepatocellular Adenoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	1/50 (2%)	Mean 2%	SD 0%	
*Liver: Hepatocellular Carcinoma, Hepatocellular Adenoma, or Hepatoblastoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	1/50 (2%)	Mean 2%	SD 0%	
*Lung: Alveolar/Bronchiolar Adenoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: WATER

Report Date: 08/04/2016

Male					Female				
*Lung:									
Alveolar/Bronchiolar Carcinoma or Alveolar/Bronchiolar Adenoma									
		0/50 (0%)				0/50 (0%)			
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	

#Lymph Node:									
Hemangioma									
		0/50 (0%)				0/50 (0%)			
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	

#Lymph Node, Mandibular:									
Hemangioma									
		0/50 (0%)				0/50 (0%)			
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	

#Lymph Node, Mesenteric:									
Hemangioma									
		0/50 (0%)				0/50 (0%)			
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	

#Lymph Node, Mesenteric:									
Hemangiosarcoma									
		0/50 (0%)				1/50 (2%)			
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	1/50 (2%)	Mean 2%	SD 0%	

#Mammary Gland:									
Adenoma									
		0/50 (0%)				2/50 (4%)			
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	2/50 (4%)	Mean 4%	SD 0%	

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: GAVAGE

Vehicle: WATER

Page: 47

Report Date: 08/04/2016

Male					Female				
#Mammary Gland: Carcinoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	6/50 (12%)	Mean 12%	SD 0%	
#Mammary Gland: Carcinoma or Adenoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	8/50 (16%)	Mean 16%	SD 0%	
#Mammary Gland: Fibroadenoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	11/50 (22%)	Mean 22%	SD 0%	
#Mammary Gland: Fibroma, Fibroadenoma or Adenoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	11/50 (22%)	Mean 22%	SD 0%	
#Mammary Gland: Fibroma, Fibroadenoma, Carcinoma, or Adenoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	15/50 (30%)	Mean 30%	SD 0%	
#Mesentery: Hemangiosarcoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	1/50 (2%)	Mean 2%	SD 0%	

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: GAVAGE

Vehicle: WATER

Page: 48

Report Date: 08/04/2016

Male					Female				
#Mesentery: Lipoma									
Overall Incidence	Total	0/50 0/50 (0%)	Mean 0%	SD 0%	Total	0/50 0/50 (0%)	Mean 0%	SD 0%	
#Mesentery: Schwannoma Malignant									
Overall Incidence	Total	1/50 1/50 (2%)	Mean 2%	SD 0%	Total	0/50 0/50 (0%)	Mean 0%	SD 0%	
*Nose: Adenoma									
Overall Incidence	Total	0/50 0/50 (0%)	Mean 0%	SD 0%	Total	0/49 0/49 (0%)	Mean 0%	SD 0%	
*Nose: Chondroma									
Overall Incidence	Total	0/50 0/50 (0%)	Mean 0%	SD 0%	Total	0/49 0/49 (0%)	Mean 0%	SD 0%	
*Nose: Olfactory Neuroblastoma									
Overall Incidence	Total	0/50 0/50 (0%)	Mean 0%	SD 0%	Total	0/49 0/49 (0%)	Mean 0%	SD 0%	
#Oral Cavity (Oral Mucosa, Tongue, Pharynx, Tooth, Gingiva): Squamous Cell Carcinoma									
Overall Incidence	Total	1/50 1/50 (2%)	Mean 2%	SD 0%	Total	1/50 1/50 (2%)	Mean 2%	SD 0%	

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: WATER

Report Date: 08/04/2016

Male						Female			
#Oral Cavity (Oral Mucosa, Tongue, Pharynx, Tooth, Gingiva): Squamous Cell Carcinoma, Papilloma Squamous, or Papilloma									
Overall Incidence	Total	1/50 (2%)	Mean 2%	SD 0%		Total	1/50 (2%)	Mean 2%	SD 0%
#Oral Mucosa: Squamous Cell Carcinoma									
Overall Incidence	Total	1/50 (2%)	Mean 2%	SD 0%		Total	1/50 (2%)	Mean 2%	SD 0%
#Ovary: Adenoma									
Overall Incidence						Total	0/50 (0%)	Mean 0%	SD 0%
#Ovary: Cystadenoma									
Overall Incidence						Total	0/50 (0%)	Mean 0%	SD 0%
#Ovary: Granulosa Cell Tumor Benign									
Overall Incidence						Total	0/50 (0%)	Mean 0%	SD 0%
#Ovary: Granulosa Cell Tumor Malignant									
Overall Incidence						Total	0/50 (0%)	Mean 0%	SD 0%

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: WATER

Report Date: 08/04/2016

Male					Female						
*Ovary: Granulosa Cell Tumor: Benign, Malignant, NOS											
Overall Incidence					Total	0/50	(0%)	Mean	0%	SD	0%
*Ovary: Granulosa-Theca Tumor Malignant											
Overall Incidence					Total	0/50	(0%)	Mean	0%	SD	0%
*Ovary: Sex Cord Stromal Tumor, Benign											
Overall Incidence					Total	0/50	(0%)	Mean	0%	SD	0%
*Ovary: Tubulostromal Adenoma											
Overall Incidence					Total	0/50	(0%)	Mean	0%	SD	0%
*Pancreas: Adenoma											
Overall Incidence					Total	0/50	(0%)	Mean	0%	SD	0%
*Pancreas: Carcinoma or Adenoma											
Overall Incidence					Total	0/50	(0%)	Mean	0%	SD	0%

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: WATER

Report Date: 08/04/2016

Male					Female				
*Parathyroid Gland: Adenoma									
Overall Incidence	Total	0/47 (0%)	Mean 0%	SD 0%	Total	0/47 (0%)	Mean 0%	SD 0%	
*Pituitary Gland: Pars Distalis or Unspecified Site: Adenoma									
Overall Incidence	Total	17/50 (34%)	Mean 34%	SD 0%	Total	32/50 (64%)	Mean 64%	SD 0%	
*Pituitary Gland: Pars Distalis or Unspecified Site: Carcinoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
*Pituitary Gland: Pars Distalis or Unspecified Site: Carcinoma or Adenoma									
Overall Incidence	Total	17/50 (34%)	Mean 34%	SD 0%	Total	32/50 (64%)	Mean 64%	SD 0%	
*Pituitary Gland: Pars Intermedia: Adenoma									
Overall Incidence	Total	1/50 (2%)	Mean 2%	SD 0%	Total	2/50 (4%)	Mean 4%	SD 0%	
*Pituitary Gland: Pars Intermedia: Carcinoma or Adenoma									
Overall Incidence	Total	1/50 (2%)	Mean 2%	SD 0%	Total	2/50 (4%)	Mean 4%	SD 0%	

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Page: 52

Report Date: 08/04/2016

Route: GAVAGE

Vehicle: WATER

Male					Female				
*Prostate: Adenoma									
Overall Incidence	Total	0/50 (0%)	Mean	0%	SD	0%			
<hr/>									
*Prostate: Carcinoma									
Overall Incidence	Total	0/50 (0%)	Mean	0%	SD	0%			
<hr/>									
*Prostate: Carcinoma or Adenoma									
Overall Incidence	Total	0/50 (0%)	Mean	0%	SD	0%			
<hr/>									
*Salivary Glands: Adenoma									
Overall Incidence	Total	0/50 (0%)	Mean	0%	SD	0%	Total	0/49 (0%)	Mean 0% SD 0%
<hr/>									
*Salivary Glands: Carcinoma									
Overall Incidence	Total	0/50 (0%)	Mean	0%	SD	0%	Total	0/49 (0%)	Mean 0% SD 0%
<hr/>									
*Salivary Glands: Carcinoma or Adenoma									
Overall Incidence	Total	0/50 (0%)	Mean	0%	SD	0%	Total	0/49 (0%)	Mean 0% SD 0%

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: GAVAGE

Vehicle: WATER

Page: 53

Report Date: 08/04/2016

Male					Female				
*Salivary Glands: Myoepithelioma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/49 (0%)	Mean 0%	SD 0%	
*Salivary Glands: Schwannoma Malignant									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/49 (0%)	Mean 0%	SD 0%	
#Seminal Vesicle: Adenoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%					
#Skeletal Muscle: Hemangiosarcoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
#Skeletal Muscle: Sarcoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
#Skin: Basal Cell Adenoma									
Overall Incidence	Total	2/50 (4%)	Mean 4%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Male					Female				
#Skin:									
Basal Cell Adenoma or Basosquamous Tumor Benign									
		2/50	(4%)			0/50	(0%)		
Overall Incidence	Total	2/50	(4%)	Mean	4%	SD	0%	Total	0/50 (0%)
#Skin:									
Basal Cell Adenoma, Basosquamous Tumor Benign, or Trichoepithelioma									
		2/50	(4%)			0/50	(0%)		
Overall Incidence	Total	2/50	(4%)	Mean	4%	SD	0%	Total	0/50 (0%)
#Skin:									
Basal Cell Carcinoma									
		0/50	(0%)			0/50	(0%)		
Overall Incidence	Total	0/50	(0%)	Mean	0%	SD	0%	Total	0/50 (0%)
#Skin:									
Basal Cell Carcinoma or Basosquamous Tumor (malignant or NOS)									
		0/50	(0%)			0/50	(0%)		
Overall Incidence	Total	0/50	(0%)	Mean	0%	SD	0%	Total	0/50 (0%)
#Skin:									
Basal Cell Carcinoma, Basal Cell Adenoma, Basosquamous Tumor (benign, malignant or NOS), or Trichoepithelioma									
		2/50	(4%)			0/50	(0%)		
Overall Incidence	Total	2/50	(4%)	Mean	4%	SD	0%	Total	0/50 (0%)
#Skin:									
Basal or Sq. Cell Carcinoma, Carcinoma, Basosq. Tumor (M or B), Basal Cell Adenoma, Adenoma, Papilloma, Sq Papilloma, Keratoacanthoma, Trichoepithelioma									
		6/50	(12%)			0/50	(0%)		
Overall Incidence	Total	6/50	(12%)	Mean	12%	SD	0%	Total	0/50 (0%)

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Male						Female					
#Skin:											
Neurofibrosarcoma, Neurofibroma, or Schwannoma (benign, malignant or NOS)											
		2/50	(4%)			2/50		(4%)			
Overall Incidence	Total	2/50	(4%)	Mean	4%	SD	0%	Total	2/50	(4%)	Mean 4% SD 0%
#Skin:											
Schwannoma Malignant											
		2/50	(4%)			2/50		(4%)			
Overall Incidence	Total	2/50	(4%)	Mean	4%	SD	0%	Total	2/50	(4%)	Mean 4% SD 0%
#Skin:											
Squamous Cell Carcinoma											
		1/50	(2%)			0/50		(0%)			
Overall Incidence	Total	1/50	(2%)	Mean	2%	SD	0%	Total	0/50	(0%)	Mean 0% SD 0%
#Skin:											
Squamous Cell Carcinoma, Basal Cell Carcinoma, Basosquamous Tumor (malignant or NOS), or Carcinoma											
		1/50	(2%)			0/50		(0%)			
Overall Incidence	Total	1/50	(2%)	Mean	2%	SD	0%	Total	0/50	(0%)	Mean 0% SD 0%
#Skin:											
Squamous Cell Papilloma											
		1/50	(2%)			0/50		(0%)			
Overall Incidence	Total	1/50	(2%)	Mean	2%	SD	0%	Total	0/50	(0%)	Mean 0% SD 0%
#Skin:											
Squamous Cell Papilloma or Papilloma											
		1/50	(2%)			0/50		(0%)			
Overall Incidence	Total	1/50	(2%)	Mean	2%	SD	0%	Total	0/50	(0%)	Mean 0% SD 0%

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: GAVAGE

Vehicle: WATER

Page: 58

Report Date: 08/04/2016

Male					Female				
#Skin:									
Squamous Cell Papilloma, Papilloma, Squamous Cell Carcinoma or Keratoacanthoma									
		4/50	(8%)			0/50	(0%)		
Overall Incidence	Total	4/50	(8%)	Mean 8%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
#Skin:									
Squamous Cell Papilloma, Papilloma, or Keratoacanthoma									
		3/50	(6%)			0/50	(0%)		
Overall Incidence	Total	3/50	(6%)	Mean 6%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
#Skin: Sebaceous Gland:									
Adenoma									
		1/50	(2%)			0/50	(0%)		
Overall Incidence	Total	1/50	(2%)	Mean 2%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
#Skin: Sebaceous Gland:									
Carcinoma or Adenoma									
		1/50	(2%)			0/50	(0%)		
Overall Incidence	Total	1/50	(2%)	Mean 2%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
*Spleen:									
Hemangiosarcoma									
		0/50	(0%)			0/50	(0%)		
Overall Incidence	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
#Stomach, Forestomach:									
Fibrosarcoma									
		0/50	(0%)			0/50	(0%)		
Overall Incidence	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: WATER

Report Date: 08/04/2016

Male					Female				
#Stomach, Forestomach: Leiomyoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
#Stomach, Forestomach: Leiomyosarcoma									
Overall Incidence	Total	1/50 (2%)	Mean 2%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
#Stomach, Forestomach: Sarcoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
#Stomach, Forestomach: Squamous Cell Carcinoma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	1/50 (2%)	Mean 2%	SD 0%	
#Stomach, Forestomach: Squamous Cell Carcinoma or Papilloma Squamous									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	1/50 (2%)	Mean 2%	SD 0%	
#Stomach, Forestomach: Squamous Cell Papilloma									
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

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Report Date: 08/04/2016

Route: GAVAGE

Vehicle: WATER

Male						Female						
#Stomach, Glandular: Fibrosarcoma												
Overall Incidence	Total	0/50 (0%)	Mean	0%	SD	0%	Total	0/50 (0%)	Mean	0%	SD	0%
#Stomach, Glandular: Leiomyosarcoma												
Overall Incidence	Total	0/50 (0%)	Mean	0%	SD	0%	Total	0/50 (0%)	Mean	0%	SD	0%
#Stomach, Glandular: Sarcoma												
Overall Incidence	Total	0/50 (0%)	Mean	0%	SD	0%	Total	0/50 (0%)	Mean	0%	SD	0%
*Testes: Adenoma												
Overall Incidence	Total	2/50 (4%)	Mean	4%	SD	0%						
*Testes: Hemangiosarcoma												
Overall Incidence	Total	0/50 (0%)	Mean	0%	SD	0%						
*Thymus: Sarcoma												
Overall Incidence	Total	0/49 (0%)	Mean	0%	SD	0%	Total	0/49 (0%)	Mean	0%	SD	0%

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: WATER

Report Date: 08/04/2016

Male					Female				
*Thymus:									
Thymoma Benign									
		2/49	(4%)			3/49	(6%)		
Overall Incidence	Total	2/49 (4.08%)	Mean 4.08%	SD 0%	Total	3/49 (6.12%)	Mean 6.12%	SD 0%	
.....									
*Thymus:									
Thymoma: Benign, Malignant, NOS									
		2/49	(4%)			3/49	(6%)		
Overall Incidence	Total	2/49 (4.08%)	Mean 4.08%	SD 0%	Total	3/49 (6.12%)	Mean 6.12%	SD 0%	
.....									
*Thyroid Gland:									
Carcinoma									
		0/50	(0%)			0/50	(0%)		
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
.....									
*Thyroid Gland: C-Cell:									
Adenoma									
		4/50	(8%)			3/50	(6%)		
Overall Incidence	Total	4/50 (8%)	Mean 8%	SD 0%	Total	3/50 (6%)	Mean 6%	SD 0%	
.....									
*Thyroid Gland: C-Cell:									
Carcinoma									
		0/50	(0%)			1/50	(2%)		
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	1/50 (2%)	Mean 2%	SD 0%	
.....									
*Thyroid Gland: C-Cell:									
Carcinoma or Adenoma									
		4/50	(8%)			4/50	(8%)		
Overall Incidence	Total	4/50 (8%)	Mean 8%	SD 0%	Total	4/50 (8%)	Mean 8%	SD 0%	

#: Denominator is number of animals necropsied

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: GAVAGE
Vehicle: WATER

Page: 63
Report Date: 08/04/2016

Male			Female		
#Uterus: Carcinoma					
Overall Incidence	Total	3/50 (6%)	Mean 6%	SD 0%	
.....					
#Uterus: Granular Cell Tumor Benign					
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	
.....					
#Uterus: Hemangiosarcoma					
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	
.....					
#Uterus: Leiomyosarcoma					
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	
.....					
#Uterus: Malignant Mixed Mullerian Tumor					
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	
.....					
#Uterus: Polyp Stromal					
Overall Incidence	Total	3/50 (6%)	Mean 6%	SD 0%	
.....					
*: Denominator is number of animals with tissues examined microscopically					
#: Denominator is number of animals necropsied					

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: GAVAGE
Vehicle: WATER

Page: 64
Report Date: 08/04/2016

Male		Female	
#Uterus: Sarcoma Stromal			
Overall Incidence	Total	1/50 (2%) 1/50 (2%)	Mean 2% SD 0%
#Uterus: Sarcoma Stromal or Polyp Stromal			
Overall Incidence	Total	4/50 (8%) 4/50 (8%)	Mean 8% SD 0%
#Uterus: Schwannoma Malignant			
Overall Incidence	Total	1/50 (2%) 1/50 (2%)	Mean 2% SD 0%
#Uterus: Squamous Cell Papilloma			
Overall Incidence	Total	0/50 (0%) 0/50 (0%)	Mean 0% SD 0%
#Vagina: Fibrosarcoma			
Overall Incidence	Total	0/50 (0%) 0/50 (0%)	Mean 0% SD 0%
#Vagina: Leiomyoma			
Overall Incidence	Total	0/50 (0%) 0/50 (0%)	Mean 0% SD 0%
*: Denominator is number of animals with tissues examined microscopically			
#: Denominator is number of animals necropsied			

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: GAVAGE

Vehicle: WATER

Page: 65

Report Date: 08/04/2016

Male					Female				
#Vagina: Polyp									
Overall Incidence	Total	1/50 (2%)	Mean 2%	SD 0%	Total	1/50 (2%)	Mean 2%	SD 0%	
#Zymbal's Gland: Carcinoma									
Overall Incidence	Total	1/50 (2%)	Mean 2%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	
#Zymbal's Gland: Carcinoma or Adenoma									
Overall Incidence	Total	1/50 (2%)	Mean 2%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%	

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

Page: 66
Report Date: 08/04/2016

Study Summary

Laboratory Name	Study Number	Study Start Date	Length of Study in Days	Number of Animals Total and (#/Cage)	Number Surviving and (Mean Life Span)	Maximum Mean Weekly Body Weight	Chemical
Male							
Battelle Northwest	052060103	09/22/08	729	50(5)	30(672)	606.7	Antimony trioxide
Battelle Northwest	052072503	08/17/09	729	50(5)	36(692)	615.2	2,3-Butanedione
Battelle Northwest	052051503	04/14/08	729	50(5)	33(688)	602.8	Metal Working Fluids: CIMSTAR 3800
Battelle Northwest	052052303	07/20/09	729	50(5)	36(696)	622.2	Metal Working Fluids: TRIM VX
Female							
Battelle Northwest	052060103	09/22/08	730	50(5)	39(704)	395.6	Antimony trioxide
Battelle Northwest	052072503	08/17/09	731	50(5)	34(688)	400.0	2,3-Butanedione
Battelle Northwest	052051503	04/14/08	731	50(5)	35(700)	384.9	Metal Working Fluids: CIMSTAR 3800
Battelle Northwest	052052303	07/20/09	731	50(5)	30(681)	391.1	Metal Working Fluids: TRIM VX

NOTE: The text on page 2 ("Report Description") describes how the studies listed here are displayed on the data pages that follow.

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

Male					Female				
#All Organs: Benign Tumors									
		34/50 (68%)	27/50 (54%)	32/50 (64%)		33/50 (66%)	39/50 (78%)	42/50 (84%)	
		24/50 (48%)				42/50 (84%)			
Overall Incidence	Total	117/200 (58.5%)	Mean 58.5%	SD 9.15%	Total	156/200 (78%)	Mean 78%	SD 8.49%	
#All Organs: Malignant Tumors									
		6/50 (12%)	13/50 (26%)	13/50 (26%)		17/50 (34%)	12/50 (24%)	11/50 (22%)	
		4/50 (8%)				13/50 (26%)			
Overall Incidence	Total	36/200 (18%)	Mean 18%	SD 9.38%	Total	53/200 (26.5%)	Mean 26.5%	SD 5.26%	
#All Organs: Malignant and Benign Tumors									
		36/50 (72%)	35/50 (70%)	37/50 (74%)		40/50 (80%)	40/50 (80%)	43/50 (86%)	
		26/50 (52%)				47/50 (94%)			
Overall Incidence	Total	134/200 (67%)	Mean 67%	SD 10.13%	Total	170/200 (85%)	Mean 85%	SD 6.63%	
#All Organs: Hemangioma									
		1/50 (2%)	1/50 (2%)	0/50 (0%)		0/50 (0%)	1/50 (2%)	0/50 (0%)	
		1/50 (2%)				0/50 (0%)			
Overall Incidence	Total	3/200 (1.5%)	Mean 1.5%	SD 1%	Total	1/200 (0.5%)	Mean 0.5%	SD 1%	
#All Organs: Hemangiosarcoma									
		3/50 (6%)	3/50 (6%)	3/50 (6%)		1/50 (2%)	2/50 (4%)	1/50 (2%)	
		0/50 (0%)				0/50 (0%)			
Overall Incidence	Total	9/200 (4.5%)	Mean 4.5%	SD 3%	Total	4/200 (2%)	Mean 2%	SD 1.63%	

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

		Male						Female						
#All Organs: Hemangiosarcoma or Hemangioma														
		4/50	(8%)	4/50	(8%)	3/50	(6%)		1/50	(2%)	3/50	(6%)	1/50	(2%)
		1/50	(2%)						0/50	(0%)				
Overall Incidence	Total	12/200	(6%)	Mean	6%	SD	2.83%	Total	5/200	(2.5%)	Mean	2.5%	SD	2.52%
#All Organs: Histiocytic Sarcoma														
		0/50	(0%)	1/50	(2%)	0/50	(0%)		0/50	(0%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)						2/50	(4%)				
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total	2/200	(1%)	Mean	1%	SD	2%
#All Organs: Leukemia: Lymphocytic, Monocytic, Mononuclear, or Undifferentiated														
		1/50	(2%)	0/50	(0%)	0/50	(0%)		0/50	(0%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)						0/50	(0%)				
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total	0/200	(0%)	Mean	0%	SD	0%
#All Organs: Malignant Lymphoma: Histiocytic, Lymphocytic, Mixed, NOS, or Undifferentiated Cell Type														
		0/50	(0%)	3/50	(6%)	0/50	(0%)		0/50	(0%)	1/50	(2%)	2/50	(4%)
		1/50	(2%)						1/50	(2%)				
Overall Incidence	Total	4/200	(2%)	Mean	2%	SD	2.83%	Total	4/200	(2%)	Mean	2%	SD	1.63%
#All Organs: Mesothelioma: Benign, Malignant, NOS														
		0/50	(0%)	1/50	(2%)	1/50	(2%)		0/50	(0%)	0/50	(0%)	0/50	(0%)
		2/50	(4%)						0/50	(0%)				
Overall Incidence	Total	4/200	(2%)	Mean	2%	SD	1.63%	Total	0/200	(0%)	Mean	0%	SD	0%

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

		Male						Female						
#All Organs: Mesothelioma: Malignant														
		0/50 1/50	(0%) (2%)	1/50	(2%)	1/50	(2%)	0/50 0/50	(0%) (0%)	0/50	(0%)	0/50	(0%)	
Overall Incidence	Total	3/200	(1.5%)	Mean	1.5%	SD	1%	Total	0/200	(0%)	Mean	0%	SD	0%
#All Organs: Osteoma														
		0/50 0/50	(0%) (0%)	0/50	(0%)	0/50	(0%)	0/50 0/50	(0%) (0%)	0/50	(0%)	0/50	(0%)	
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total	0/200	(0%)	Mean	0%	SD	0%
#All Organs: Osteosarcoma														
		0/50 0/50	(0%) (0%)	0/50	(0%)	1/50	(2%)	0/50 0/50	(0%) (0%)	0/50	(0%)	0/50	(0%)	
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total	0/200	(0%)	Mean	0%	SD	0%
#All Organs: Osteosarcoma or Osteoma														
		0/50 0/50	(0%) (0%)	0/50	(0%)	1/50	(2%)	0/50 0/50	(0%) (0%)	0/50	(0%)	0/50	(0%)	
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total	0/200	(0%)	Mean	0%	SD	0%
*Adrenal Cortex: Adenoma														
		3/50 1/50	(6%) (2%)	2/50	(4%)	2/50	(4%)	0/50 0/50	(0%) (0%)	1/50	(2%)	2/50	(4%)	
Overall Incidence	Total	8/200	(4%)	Mean	4%	SD	1.63%	Total	3/200	(1.5%)	Mean	1.5%	SD	1.91%

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: AIR

Report Date: 08/04/2016

#: Denominator is number of animals necropsied

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: AIR

Report Date: 08/04/2016

Overall Incidence													
		Male						Female					
		0/50 (0%)		0/50 (0%)		0/50 (0%)		0/50 (0%)		0/50 (0%)		0/50 (0%)	
		0/50 (0%)		0/50 (0%)		0/50 (0%)		0/50 (0%)		0/50 (0%)		0/50 (0%)	
Overall Incidence		Total	0/200 (0%)	Mean	0%	SD	0%	Total	0/200 (0%)	Mean	0%	SD	0%
		0/50 (0%)		0/50 (0%)		2/50 (4%)		0/50 (0%)		0/50 (0%)		0/50 (0%)	
		0/50 (0%)		0/50 (0%)		2/50 (4%)		0/50 (0%)		0/50 (0%)		0/50 (0%)	
Overall Incidence		Total	2/200 (1%)	Mean	1%	SD	2%	Total	0/200 (0%)	Mean	0%	SD	0%
		0/50 (0%)		1/50 (2%)		0/50 (0%)		0/50 (0%)		0/50 (0%)		0/50 (0%)	
		0/50 (0%)		1/50 (2%)		0/50 (0%)		0/50 (0%)		0/50 (0%)		0/50 (0%)	
Overall Incidence		Total	1/200 (0.5%)	Mean	0.5%	SD	1%	Total	0/200 (0%)	Mean	0%	SD	0%
		1/50 (2%)		3/50 (6%)		0/50 (0%)		1/50 (2%)		1/50 (2%)		2/50 (4%)	
		0/50 (0%)		3/50 (6%)		0/50 (0%)		1/50 (2%)		1/50 (2%)		2/50 (4%)	
Overall Incidence		Total	4/200 (2%)	Mean	2%	SD	2.83%	Total	4/200 (2%)	Mean	2%	SD	1.63%
		0/50 (0%)		1/50 (2%)		0/50 (0%)		1/50 (2%)		0/50 (0%)		0/50 (0%)	
		0/50 (0%)		1/50 (2%)		0/50 (0%)		1/50 (2%)		0/50 (0%)		0/50 (0%)	
Overall Incidence		Total	1/200 (0.5%)	Mean	0.5%	SD	1%	Total	1/200 (0.5%)	Mean	0.5%	SD	1%

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

Male										Female													
*Brain:																							
Meningioma Malignant																							
		0/50	(0%)	0/50	(0%)	1/50	(2%)			0/50	(0%)	0/50	(0%)	0/50	(0%)								
		0/50	(0%)							0/50	(0%)												
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total		0/200	(0%)	Mean	0%	SD	0%								
*Brain:																							
Meningioma: Benign, Malignant, NOS																							
		0/50	(0%)	0/50	(0%)	1/50	(2%)			0/50	(0%)	0/50	(0%)	0/50	(0%)								
		0/50	(0%)							0/50	(0%)												
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total		0/200	(0%)	Mean	0%	SD	0%								
*Brain:																							
Oligodendroglioma Benign																							
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	1/50	(2%)	0/50	(0%)								
		0/50	(0%)							0/50	(0%)												
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total		1/200	(0.5%)	Mean	0.5%	SD	1%								
*Brain:																							
Oligodendroglioma, Glioma, or Astrocytoma																							
		0/50	(0%)	1/50	(2%)	0/50	(0%)			0/50	(0%)	1/50	(2%)	0/50	(0%)								
		0/50	(0%)							0/50	(0%)												
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total		1/200	(0.5%)	Mean	0.5%	SD	1%								
*Clitoral/Preputial Gland:																							
Carcinoma																							
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	0/49	(0%)	0/50	(0%)								
		0/49	(0%)							0/50	(0%)												
Overall Incidence	Total	0/199	(0%)	Mean	0%	SD	0%	Total		0/199	(0%)	Mean	0%	SD	0%								

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

Page: 74
Report Date: 08/04/2016

Male														Female					
*Clitoral/Preputial Gland: Carcinoma or Adenoma																			
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	0/49	(0%)	0/50	(0%)				
		0/49	(0%)							0/50	(0%)								
Overall Incidence	Total	0/199	(0%)	Mean	0%	SD	0%	Total		0/199	(0%)	Mean	0%	SD	0%				

*Heart: Schwannoma Benign																			
		0/50	(0%)	0/50	(0%)	1/50	(2%)			0/50	(0%)	0/50	(0%)	0/50	(0%)				
		0/50	(0%)							0/50	(0%)								
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total		0/200	(0%)	Mean	0%	SD	0%				

*Heart: Schwannoma NOS																			
		1/50	(2%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)	0/50	(0%)				
		0/50	(0%)							0/50	(0%)								
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total		0/200	(0%)	Mean	0%	SD	0%				

#Intestine Small: Duodenum: Fibroma																			
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)	0/50	(0%)				
		0/50	(0%)							0/50	(0%)								
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total		0/200	(0%)	Mean	0%	SD	0%				

#Intestine Small: Duodenum: Leiomyosarcoma																			
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)	0/50	(0%)				
		0/50	(0%)							0/50	(0%)								
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total		0/200	(0%)	Mean	0%	SD	0%				

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

Male												Female					
#Intestine Small: Jejunum: Leiomyoma																	
		0/50	(0%)	1/50	(2%)	0/50	(0%)			1/50	(2%)	0/50	(0%)	0/50	(0%)		
		0/50	(0%)							0/50	(0%)						
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total		1/200	(0.5%)	Mean	0.5%	SD	1%		
#Intestine Small: Jejunum: Leiomyosarcoma																	
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)	0/50	(0%)		
		0/50	(0%)							0/50	(0%)						
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total		0/200	(0%)	Mean	0%	SD	0%		
#Intestine Small: Site Unspecified: Fibroma																	
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)	0/50	(0%)		
		0/50	(0%)							0/50	(0%)						
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total		0/200	(0%)	Mean	0%	SD	0%		
#Intestine Small: Site Unspecified: Leiomyoma																	
		0/50	(0%)	1/50	(2%)	0/50	(0%)			1/50	(2%)	0/50	(0%)	0/50	(0%)		
		0/50	(0%)							0/50	(0%)						
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total		1/200	(0.5%)	Mean	0.5%	SD	1%		
#Intestine Small: Site Unspecified: Leiomyosarcoma																	
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)	0/50	(0%)		
		0/50	(0%)							0/50	(0%)						
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total		0/200	(0%)	Mean	0%	SD	0%		

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

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Report Date: 08/04/2016

Male										Female					
*Islets, Pancreatic: Adenoma															
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)	1/49	(2%)
		5/50	(10%)							0/50	(0%)				
Overall Incidence	Total	5/200	(2.5%)	Mean	2.5%	SD	5%	Total		1/199	(0.5%)	Mean	0.51%	SD	1.02%
*Islets, Pancreatic: Carcinoma															
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)	0/49	(0%)
		0/50	(0%)							0/50	(0%)				
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total		0/199	(0%)	Mean	0%	SD	0%
*Islets, Pancreatic: Carcinoma or Adenoma															
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)	1/49	(2%)
		5/50	(10%)							0/50	(0%)				
Overall Incidence	Total	5/200	(2.5%)	Mean	2.5%	SD	5%	Total		1/199	(0.5%)	Mean	0.51%	SD	1.02%
*Kidney: Pelvis and Transitional Epithelium: Papilloma															
		0/50	(0%)	0/50	(0%)	1/50	(2%)			0/50	(0%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)							0/50	(0%)				
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total		0/200	(0%)	Mean	0%	SD	0%
*Kidney: Renal Tubule: Adenoma															
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)	1/50	(2%)
		0/50	(0%)							0/50	(0%)				
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total		1/200	(0.5%)	Mean	0.5%	SD	1%

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

		Male						Female						
*Kidney: Renal Tubule: Carcinoma														
		0/50 1/50	(0%) (2%)	0/50	(0%)	0/50	(0%)	0/50 0/50	(0%) (0%)	0/50	(0%)	0/50	(0%)	
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total	0/200	(0%)	Mean	0%	SD	0%
*Kidney: Renal Tubule: Carcinoma or Adenoma														
		0/50 1/50	(0%) (2%)	0/50	(0%)	0/50	(0%)	0/50 0/50	(0%) (0%)	0/50	(0%)	1/50	(2%)	
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total	1/200	(0.5%)	Mean	0.5%	SD	1%
*Kidney: Renal Tubule: Lipoma														
		0/50 0/50	(0%) (0%)	0/50	(0%)	0/50	(0%)	0/50 0/50	(0%) (0%)	0/50	(0%)	0/50	(0%)	
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total	0/200	(0%)	Mean	0%	SD	0%
*Kidney: Renal Tubule: Liposarcoma														
		0/50 0/50	(0%) (0%)	0/50	(0%)	0/50	(0%)	0/50 0/50	(0%) (0%)	0/50	(0%)	0/50	(0%)	
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total	0/200	(0%)	Mean	0%	SD	0%
*Liver: Cholangioma														
		0/50 0/50	(0%) (0%)	0/50	(0%)	0/50	(0%)	0/50 0/50	(0%) (0%)	3/50	(6%)	0/50	(0%)	
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total	3/200	(1.5%)	Mean	1.5%	SD	3%

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

		Male						Female						
*Liver: Hemangioma														
		0/50	(0%)	1/50	(2%)	0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)	
		0/50	(0%)					0/50	(0%)					
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total	0/200	(0%)	Mean	0%	SD	0%
*Liver: Hepatocellular Adenoma														
		0/50	(0%)	0/50	(0%)	0/50	(0%)	1/50	(2%)	0/50	(0%)	0/50	(0%)	
		1/50	(2%)					0/50	(0%)					
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total	1/200	(0.5%)	Mean	0.5%	SD	1%
*Liver: Hepatocellular Carcinoma or Hepatocellular Adenoma														
		0/50	(0%)	0/50	(0%)	0/50	(0%)	1/50	(2%)	0/50	(0%)	0/50	(0%)	
		1/50	(2%)					0/50	(0%)					
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total	1/200	(0.5%)	Mean	0.5%	SD	1%
*Liver: Hepatocellular Carcinoma, Hepatocellular Adenoma, or Hepatoblastoma														
		0/50	(0%)	0/50	(0%)	0/50	(0%)	1/50	(2%)	0/50	(0%)	0/50	(0%)	
		1/50	(2%)					0/50	(0%)					
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total	1/200	(0.5%)	Mean	0.5%	SD	1%
*Lung: Alveolar/Bronchiolar Adenoma														
		3/50	(6%)	1/50	(2%)	1/50	(2%)	0/50	(0%)	0/50	(0%)	0/50	(0%)	
		0/50	(0%)					0/50	(0%)					
Overall Incidence	Total	5/200	(2.5%)	Mean	2.5%	SD	2.52%	Total	0/200	(0%)	Mean	0%	SD	0%

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Version: Aug2016
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: Wistar-Han
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

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 Report Date: 08/04/2016

Male					Female				
*Lung:									
Alveolar/Bronchiolar Carcinoma or Alveolar/Bronchiolar Adenoma									
		3/50 (6%)	1/50 (2%)	1/50 (2%)		0/50 (0%)	0/50 (0%)	0/50 (0%)	
		0/50 (0%)				0/50 (0%)			
Overall Incidence	Total	5/200 (2.5%)	Mean 2.5%	SD 2.52%	Total	0/200 (0%)	Mean 0%	SD 0%	
.....									
#Lymph Node:									
Hemangioma									
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)	
		1/50 (2%)				0/50 (0%)			
Overall Incidence	Total	1/200 (0.5%)	Mean 0.5%	SD 1%	Total	0/200 (0%)	Mean 0%	SD 0%	
.....									
#Lymph Node, Mandibular:									
Hemangioma									
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	1/50 (2%)	0/50 (0%)	
		0/50 (0%)				0/50 (0%)			
Overall Incidence	Total	0/200 (0%)	Mean 0%	SD 0%	Total	1/200 (0.5%)	Mean 0.5%	SD 1%	
.....									
#Lymph Node, Mesenteric:									
Hemangioma									
		1/50 (2%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)	
		0/50 (0%)				0/50 (0%)			
Overall Incidence	Total	1/200 (0.5%)	Mean 0.5%	SD 1%	Total	0/200 (0%)	Mean 0%	SD 0%	
.....									
#Lymph Node, Mesenteric:									
Hemangiosarcoma									
		2/50 (4%)	2/50 (4%)	3/50 (6%)		0/50 (0%)	2/50 (4%)	1/50 (2%)	
		0/50 (0%)				0/50 (0%)			
Overall Incidence	Total	7/200 (3.5%)	Mean 3.5%	SD 2.52%	Total	3/200 (1.5%)	Mean 1.5%	SD 1.91%	

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#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

Male										Female					
#Mammary Gland: Adenoma															
		0/50	(0%)	0/50	(0%)	0/50	(0%)		0/50	(0%)	5/50	(10%)	2/50	(4%)	
		0/50	(0%)						4/50	(8%)					
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total	11/200	(5.5%)	Mean	5.5%	SD	4.43%	
#Mammary Gland: Carcinoma															
		0/50	(0%)	1/50	(2%)	0/50	(0%)		5/50	(10%)	4/50	(8%)	4/50	(8%)	
		0/50	(0%)						4/50	(8%)					
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total	17/200	(8.5%)	Mean	8.5%	SD	1%	
#Mammary Gland: Carcinoma or Adenoma															
		0/50	(0%)	1/50	(2%)	0/50	(0%)		5/50	(10%)	8/50	(16%)	6/50	(12%)	
		0/50	(0%)						8/50	(16%)					
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total	27/200	(13.5%)	Mean	13.5%	SD	3%	
#Mammary Gland: Fibroadenoma															
		0/50	(0%)	0/50	(0%)	0/50	(0%)		7/50	(14%)	13/50	(26%)	9/50	(18%)	
		0/50	(0%)						2/50	(4%)					
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total	31/200	(15.5%)	Mean	15.5%	SD	9.15%	
#Mammary Gland: Fibroma, Fibroadenoma or Adenoma															
		0/50	(0%)	0/50	(0%)	0/50	(0%)		7/50	(14%)	15/50	(30%)	11/50	(22%)	
		0/50	(0%)						6/50	(12%)					
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total	39/200	(19.5%)	Mean	19.5%	SD	8.23%	

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Male										Female					
#Mammary Gland: Fibroma, Fibroadenoma, Carcinoma, or Adenoma															
		0/50	(0%)	1/50	(2%)	0/50	(0%)		10/50	(20%)	15/50	(30%)	13/50	(26%)	
		0/50	(0%)						9/50	(18%)					
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total	47/200	(23.5%)	Mean	23.5%	SD	5.51%	
#Mesentery: Hemangiosarcoma															
		0/50	(0%)	0/50	(0%)	0/50	(0%)		0/50	(0%)	0/50	(0%)	0/50	(0%)	
		0/50	(0%)						0/50	(0%)					
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total	0/200	(0%)	Mean	0%	SD	0%	
#Mesentery: Lipoma															
		0/50	(0%)	0/50	(0%)	0/50	(0%)		0/50	(0%)	0/50	(0%)	0/50	(0%)	
		0/50	(0%)						0/50	(0%)					
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total	0/200	(0%)	Mean	0%	SD	0%	
#Mesentery: Schwannoma Malignant															
		0/50	(0%)	0/50	(0%)	0/50	(0%)		0/50	(0%)	0/50	(0%)	0/50	(0%)	
		0/50	(0%)						0/50	(0%)					
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total	0/200	(0%)	Mean	0%	SD	0%	
*Nose: Adenoma															
		0/50	(0%)	1/50	(2%)	0/50	(0%)		0/50	(0%)	0/50	(0%)	0/50	(0%)	
		0/50	(0%)						0/50	(0%)					
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total	0/200	(0%)	Mean	0%	SD	0%	

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: AIR

Report Date: 08/04/2016

Male														Female					
*Nose:																			
Chondroma																			
		1/50 (2%)		0/50 (0%)		0/50 (0%)				0/50 (0%)		0/50 (0%)		0/50 (0%)					
		0/50 (0%)								0/50 (0%)									
Overall Incidence	Total	1/200 (0.5%)	Mean	0.5%	SD	1%	Total	0/200 (0%)	Mean	0%	SD	0%							
*Nose:																			
Olfactory Neuroblastoma																			
		0/50 (0%)		0/50 (0%)		0/50 (0%)				0/50 (0%)		0/50 (0%)		0/50 (0%)					
		0/50 (0%)								0/50 (0%)									
Overall Incidence	Total	0/200 (0%)	Mean	0%	SD	0%	Total	0/200 (0%)	Mean	0%	SD	0%							
#Oral Cavity (Oral Mucosa, Tongue, Pharynx, Tooth, Gingiva):																			
Squamous Cell Carcinoma																			
		0/50 (0%)		1/50 (2%)		0/50 (0%)				0/50 (0%)		0/50 (0%)		0/50 (0%)					
		0/50 (0%)								0/50 (0%)									
Overall Incidence	Total	1/200 (0.5%)	Mean	0.5%	SD	1%	Total	0/200 (0%)	Mean	0%	SD	0%							
#Oral Cavity (Oral Mucosa, Tongue, Pharynx, Tooth, Gingiva):																			
Squamous Cell Carcinoma, Papilloma Squamous, or Papilloma																			
		0/50 (0%)		1/50 (2%)		0/50 (0%)				0/50 (0%)		0/50 (0%)		0/50 (0%)					
		0/50 (0%)								0/50 (0%)									
Overall Incidence	Total	1/200 (0.5%)	Mean	0.5%	SD	1%	Total	0/200 (0%)	Mean	0%	SD	0%							
#Oral Mucosa:																			
Squamous Cell Carcinoma																			
		0/50 (0%)		1/50 (2%)		0/50 (0%)				0/50 (0%)		0/50 (0%)		0/50 (0%)					
		0/50 (0%)								0/50 (0%)									
Overall Incidence	Total	1/200 (0.5%)	Mean	0.5%	SD	1%	Total	0/200 (0%)	Mean	0%	SD	0%							

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

Male			Female			
*Ovary: Adenoma						
		2/50 (4%)	0/50 (0%)	0/50 (0%)		
		0/50 (0%)				
Overall Incidence	Total	2/200 (1%)	Mean 1%	SD 2%		
*Ovary: Cystadenoma						
		1/50 (2%)	0/50 (0%)	0/50 (0%)		
		0/50 (0%)				
Overall Incidence	Total	1/200 (0.5%)	Mean 0.5%	SD 1%		
*Ovary: Granulosa Cell Tumor Benign						
		0/50 (0%)	0/50 (0%)	1/50 (2%)		
		0/50 (0%)				
Overall Incidence	Total	1/200 (0.5%)	Mean 0.5%	SD 1%		
*Ovary: Granulosa Cell Tumor Malignant						
		0/50 (0%)	0/50 (0%)	0/50 (0%)		
		1/50 (2%)				
Overall Incidence	Total	1/200 (0.5%)	Mean 0.5%	SD 1%		
*Ovary: Granulosa Cell Tumor: Benign, Malignant, NOS						
		0/50 (0%)	0/50 (0%)	1/50 (2%)		
		1/50 (2%)				
Overall Incidence	Total	2/200 (1%)	Mean 1%	SD 1.15%		
*: Denominator is number of animals with tissues examined microscopically						
#: Denominator is number of animals necropsied						

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

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Report Date: 08/04/2016

Male										Female					
*Ovary: Granulosa-Theca Tumor Malignant															
		0/50 0/50		(0%) (0%)				1/50 0/50		(2%) (0%)		0/50 0/50		(0%) (0%)	
Overall Incidence		Total		1/200 (0.5%)		Mean		0.5%		SD		1%			
*Ovary: Sex Cord Stromal Tumor, Benign															
		0/50 0/50		(0%) (0%)				0/50 0/200		(0%) (0%)		0/50 0/50		(0%) (0%)	
Overall Incidence		Total		0/200 (0%)		Mean		0%		SD		0%			
*Ovary: Tubulostromal Adenoma															
		2/50 0/50		(4%) (0%)				1/50 3/200		(2%) (1.5%)		0/50 0/50		(0%) (0%)	
Overall Incidence		Total		3/200 (1.5%)		Mean		1.5%		SD		1.91%			
*Pancreas: Adenoma															
		0/50 1/50		(0%) (2%)		0/50 1/50		(0%) (2%)				0/50 0/50		(0%) (0%)	
Overall Incidence		Total		2/200 (1%)		Mean		1%		SD		1.15%			
*Pancreas: Carcinoma or Adenoma															
		0/50 1/50		(0%) (2%)		0/50 1/50		(0%) (2%)				0/50 0/50		(0%) (0%)	
Overall Incidence		Total		2/200 (1%)		Mean		1%		SD		1.15%			

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Male										Female					
*Parathyroid Gland: Adenoma															
		0/44	(0%)	1/49	(2%)	0/43	(0%)	0/39	(0%)	0/46	(0%)	0/47	(0%)		
		0/39	(0%)					1/42	(2%)						
Overall Incidence	Total	1/175	(0.57%)	Mean	0.51%	SD	1.02%	Total	1/174	(0.57%)	Mean	0.6%	SD	1.19%	
*Pituitary Gland: Pars Distalis or Unspecified Site: Adenoma															
		14/50	(28%)	9/50	(18%)	16/49	(33%)	19/50	(38%)	26/50	(52%)	35/50	(70%)		
		14/50	(28%)					34/50	(68%)						
Overall Incidence	Total	53/199	(26.63%)	Mean	26.66%	SD	6.18%	Total	114/200	(57%)	Mean	57%	SD	15.01%	
*Pituitary Gland: Pars Distalis or Unspecified Site: Carcinoma															
		0/50	(0%)	0/50	(0%)	0/49	(0%)	1/50	(2%)	0/50	(0%)	0/50	(0%)		
		0/50	(0%)					0/50	(0%)						
Overall Incidence	Total	0/199	(0%)	Mean	0%	SD	0%	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	
*Pituitary Gland: Pars Distalis or Unspecified Site: Carcinoma or Adenoma															
		14/50	(28%)	9/50	(18%)	16/49	(33%)	20/50	(40%)	26/50	(52%)	35/50	(70%)		
		14/50	(28%)					34/50	(68%)						
Overall Incidence	Total	53/199	(26.63%)	Mean	26.66%	SD	6.18%	Total	115/200	(57.5%)	Mean	57.5%	SD	14.18%	
*Pituitary Gland: Pars Intermedia: Adenoma															
		1/50	(2%)	2/50	(4%)	2/49	(4%)	0/50	(0%)	1/50	(2%)	1/50	(2%)		
		1/50	(2%)					1/50	(2%)						
Overall Incidence	Total	6/199	(3.02%)	Mean	3.02%	SD	1.18%	Total	3/200	(1.5%)	Mean	1.5%	SD	1%	

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

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		Male						Female						
*Pituitary Gland: Pars Intermedia: Carcinoma or Adenoma														
		1/50	(2%)	2/50	(4%)	2/49	(4%)		0/50	(0%)	1/50	(2%)	1/50	(2%)
		1/50	(2%)						1/50	(2%)				
Overall Incidence	Total	6/199	(3.02%)	Mean	3.02%	SD	1.18%	Total	3/200	(1.5%)	Mean	1.5%	SD	1%
*Prostate: Adenoma														
		1/50	(2%)	0/50	(0%)	1/50	(2%)							
		0/50	(0%)											
Overall Incidence	Total	2/200	(1%)	Mean	1%	SD	1.15%							
*Prostate: Carcinoma														
		0/50	(0%)	1/50	(2%)	0/50	(0%)							
		0/50	(0%)											
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%							
*Prostate: Carcinoma or Adenoma														
		1/50	(2%)	1/50	(2%)	1/50	(2%)							
		0/50	(0%)											
Overall Incidence	Total	3/200	(1.5%)	Mean	1.5%	SD	1%							
*Salivary Glands: Adenoma														
		0/50	(0%)	0/50	(0%)	0/50	(0%)		0/50	(0%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)						0/50	(0%)				
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total	0/200	(0%)	Mean	0%	SD	0%

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: AIR

Report Date: 08/04/2016

Male														Female					
*Salivary Glands: Carcinoma																			
		0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)						
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total	0/200	(0%)	Mean	0%	SD	0%					
.....																			
*Salivary Glands: Carcinoma or Adenoma																			
		0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)						
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total	0/200	(0%)	Mean	0%	SD	0%					
.....																			
*Salivary Glands: Myoepithelioma																			
		1/50	(2%)	0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)						
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total	0/200	(0%)	Mean	0%	SD	0%					
.....																			
*Salivary Glands: Schwannoma Malignant																			
		0/50	(0%)	0/50	(0%)	1/50	(2%)	0/50	(0%)	0/50	(0%)	0/50	(0%)						
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total	0/200	(0%)	Mean	0%	SD	0%					
.....																			
#Seminal Vesicle: Adenoma																			
		0/50	(0%)	0/50	(0%)	1/50	(2%)												
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%												

#: Denominator is number of animals necropsied

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Version: Aug2016
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: Wistar-Han
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

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 Report Date: 08/04/2016

Male						Female					
#Skin:											
Basal Cell Carcinoma											
		0/50 (0%)	0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)	0/50 (0%)	0/50 (0%)		
		0/50 (0%)				0/50 (0%)					
Overall Incidence	Total	1/200 (0.5%)	Mean 0.5%	SD 1%		Total	0/200 (0%)	Mean 0%	SD 0%		
.....											
#Skin:											
Basal Cell Carcinoma or Basosquamous Tumor (malignant or NOS)											
		0/50 (0%)	0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)	0/50 (0%)	0/50 (0%)		
		0/50 (0%)				0/50 (0%)					
Overall Incidence	Total	1/200 (0.5%)	Mean 0.5%	SD 1%		Total	0/200 (0%)	Mean 0%	SD 0%		
.....											
#Skin:											
Basal Cell Carcinoma, Basal Cell Adenoma, Basosquamous Tumor (benign, malignant or NOS), or Trichoepithelioma											
		0/50 (0%)	0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)	0/50 (0%)	0/50 (0%)		
		0/50 (0%)				0/50 (0%)					
Overall Incidence	Total	1/200 (0.5%)	Mean 0.5%	SD 1%		Total	0/200 (0%)	Mean 0%	SD 0%		
.....											
#Skin:											
Basal or Sq. Cell Carcinoma, Carcinoma, Basosq. Tumor (M or B), Basal Cell Adenoma, Adenoma, Papilloma, Sq Papilloma, Keratoacanthoma, Trichoepithelioma											
		1/50 (2%)	3/50 (6%)	2/50 (4%)		0/50 (0%)	0/50 (0%)	0/50 (0%)	0/50 (0%)		
		1/50 (2%)				0/50 (0%)					
Overall Incidence	Total	7/200 (3.5%)	Mean 3.5%	SD 1.91%		Total	0/200 (0%)	Mean 0%	SD 0%		
.....											
#Skin:											
Fibroma											
		2/50 (4%)	0/50 (0%)	1/50 (2%)		2/50 (4%)	0/50 (0%)	0/50 (0%)	0/50 (0%)		
		1/50 (2%)				0/50 (0%)					
Overall Incidence	Total	4/200 (2%)	Mean 2%	SD 1.63%		Total	2/200 (1%)	Mean 1%	SD 2%		

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: AIR

Report Date: 08/04/2016

Male								Female							
#Skin: Fibroma, Fibrosarcoma, Sarcoma, Myxoma, Myxosarcoma, or Fibrous Histiocytoma															
		2/50	(4%)	2/50	(4%)	2/50	(4%)			2/50	(4%)	0/50	(0%)	0/50	(0%)
		1/50	(2%)							0/50	(0%)				
Overall Incidence	Total	7/200	(3.5%)	Mean	3.5%	SD	1%	Total		2/200	(1%)	Mean	1%	SD	2%
.....															
#Skin: Fibrosarcoma															
		0/50	(0%)	0/50	(0%)	1/50	(2%)			0/50	(0%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)							0/50	(0%)				
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total		0/200	(0%)	Mean	0%	SD	0%
.....															
#Skin: Fibrosarcoma, Sarcoma, Myxosarcoma, or Fibrous Histiocytoma															
		0/50	(0%)	1/50	(2%)	1/50	(2%)			0/50	(0%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)							0/50	(0%)				
Overall Incidence	Total	2/200	(1%)	Mean	1%	SD	1.15%	Total		0/200	(0%)	Mean	0%	SD	0%
.....															
#Skin: Fibrous Histiocytoma															
		0/50	(0%)	1/50	(2%)	0/50	(0%)			0/50	(0%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)							0/50	(0%)				
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total		0/200	(0%)	Mean	0%	SD	0%
.....															
#Skin: Hamartoma															
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)							0/50	(0%)				
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total		0/200	(0%)	Mean	0%	SD	0%

#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

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Report Date: 08/04/2016

Male					Female									
#Skin: Hemangiosarcoma														
		0/50 0/50	(0%) (0%)	0/50 Mean	(0%) 0%	0/50 SD	(0%) 0%	0/50 Total	(0%) 0/200	(0%) (0%)	0/50 Mean	(0%) 0%	0/50 SD	(0%) 0%
Overall Incidence	Total	0/200 (0%)		Mean 0%		SD 0%		Total	0/200 (0%)		Mean 0%		SD 0%	
#Skin: Keratoacanthoma														
		1/50 1/50	(2%) (2%)	3/50 Mean	(6%) 3%	1/50 SD	(2%) 2%	0/50 Total	(0%) 0/200	(0%) (0%)	0/50 Mean	(0%) 0%	0/50 SD	(0%) 0%
Overall Incidence	Total	6/200 (3%)		Mean 3%		SD 2%		Total	0/200 (0%)		Mean 0%		SD 0%	
#Skin: Lipoma														
		0/50 0/50	(0%) (0%)	0/50 Mean	(0%) 0.5%	1/50 SD	(2%) 1%	0/50 Total	(0%) 0/200	(0%) (0%)	0/50 Mean	(0%) 0%	0/50 SD	(0%) 0%
Overall Incidence	Total	1/200 (0.5%)		Mean 0.5%		SD 1%		Total	0/200 (0%)		Mean 0%		SD 0%	
#Skin: Liposarcoma														
		0/50 0/50	(0%) (0%)	0/50 Mean	(0%) 0%	0/50 SD	(0%) 0%	0/50 Total	(0%) 1/200	(0%) (0.5%)	0/50 Mean	(0%) 0.5%	1/50 SD	(2%) 1%
Overall Incidence	Total	0/200 (0%)		Mean 0%		SD 0%		Total	1/200 (0.5%)		Mean 0.5%		SD 1%	
#Skin: Myxoma														
		0/50 0/50	(0%) (0%)	1/50 Mean	(2%) 0.5%	0/50 SD	(0%) 1%	0/50 Total	(0%) 0/200	(0%) (0%)	0/50 Mean	(0%) 0%	0/50 SD	(0%) 0%
Overall Incidence	Total	1/200 (0.5%)		Mean 0.5%		SD 1%		Total	0/200 (0%)		Mean 0%		SD 0%	

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Male						Female					
#Skin:											
Neurofibrosarcoma or Schwannoma (malignant or NOS)											
		0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)			0/50	(0%)			0/50	(0%)
Overall Incidence	Total	0/200	(0%)	Mean 0%	SD 0%	Total	0/200	(0%)	Mean 0%	SD 0%	
#Skin:											
Neurofibrosarcoma, Neurofibroma, or Schwannoma (benign, malignant or NOS)											
		0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)			0/50	(0%)			0/50	(0%)
Overall Incidence	Total	0/200	(0%)	Mean 0%	SD 0%	Total	0/200	(0%)	Mean 0%	SD 0%	
#Skin:											
Schwannoma Malignant											
		0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)			0/50	(0%)			0/50	(0%)
Overall Incidence	Total	0/200	(0%)	Mean 0%	SD 0%	Total	0/200	(0%)	Mean 0%	SD 0%	
#Skin:											
Squamous Cell Carcinoma											
		0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)			0/50	(0%)			0/50	(0%)
Overall Incidence	Total	0/200	(0%)	Mean 0%	SD 0%	Total	0/200	(0%)	Mean 0%	SD 0%	
#Skin:											
Squamous Cell Carcinoma, Basal Cell Carcinoma, Basosquamous Tumor (malignant or NOS), or Carcinoma											
		0/50	(0%)	0/50	(0%)	1/50	(2%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)			0/50	(0%)			0/50	(0%)
Overall Incidence	Total	1/200	(0.5%)	Mean 0.5%	SD 1%	Total	0/200	(0%)	Mean 0%	SD 0%	

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

Male					Female				
#Skin:									
Squamous Cell Papilloma									
		0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)			0/50	(0%)		
Overall Incidence	Total	0/200	(0%)	Mean 0%	SD 0%	Total	0/200	(0%)	Mean 0%
									SD 0%
#Skin:									
Squamous Cell Papilloma or Papilloma									
		0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)			0/50	(0%)		
Overall Incidence	Total	0/200	(0%)	Mean 0%	SD 0%	Total	0/200	(0%)	Mean 0%
									SD 0%
#Skin:									
Squamous Cell Papilloma, Papilloma, Squamous Cell Carcinoma or Keratoacanthoma									
		1/50	(2%)	3/50	(6%)	1/50	(2%)	0/50	(0%)
		1/50	(2%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	6/200	(3%)	Mean 3%	SD 2%	Total	0/200	(0%)	Mean 0%
									SD 0%
#Skin:									
Squamous Cell Papilloma, Papilloma, or Keratoacanthoma									
		1/50	(2%)	3/50	(6%)	1/50	(2%)	0/50	(0%)
		1/50	(2%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	6/200	(3%)	Mean 3%	SD 2%	Total	0/200	(0%)	Mean 0%
									SD 0%
#Skin: Sebaceous Gland:									
Adenoma									
		0/50	(0%)	1/50	(2%)	0/50	(0%)	0/50	(0%)
		1/50	(2%)			0/50	(0%)		
Overall Incidence	Total	2/200	(1%)	Mean 1%	SD 1.15%	Total	0/200	(0%)	Mean 0%
									SD 0%

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

		Male				Female							
#Skin: Sebaceous Gland: Carcinoma or Adenoma													
		0/50 1/50	(0%) (2%)	1/50	(2%)	0/50	(0%)	0/50	(0%)	0/50	(0%)		
Overall Incidence	Total	2/200 (1%)		Mean	1%	SD	1.15%	Total	0/200 (0%)	Mean	0%	SD	0%
*Spleen: Hemangiosarcoma													
		0/50 0/50	(0%) (0%)	1/50	(2%)	0/50	(0%)	0/50	(0%)	0/50	(0%)		
Overall Incidence	Total	1/200 (0.5%)		Mean	0.5%	SD	1%	Total	0/200 (0%)	Mean	0%	SD	0%
#Stomach, Forestomach: Fibrosarcoma													
		0/50 0/50	(0%) (0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)	0/50	(0%)		
Overall Incidence	Total	0/200 (0%)		Mean	0%	SD	0%	Total	0/200 (0%)	Mean	0%	SD	0%
#Stomach, Forestomach: Leiomyoma													
		0/50 0/50	(0%) (0%)	0/50	(0%)	1/50	(2%)	1/50 0/50	(2%) (0%)	0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/200 (0.5%)		Mean	0.5%	SD	1%	Total	1/200 (0.5%)	Mean	0.5%	SD	1%
#Stomach, Forestomach: Leiomyosarcoma													
		0/50 0/50	(0%) (0%)	0/50	(0%)	0/50	(0%)	0/50 0/50	(0%) (0%)	0/50	(0%)	1/50	(2%)
Overall Incidence	Total	0/200 (0%)		Mean	0%	SD	0%	Total	1/200 (0.5%)	Mean	0.5%	SD	1%

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

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Male								Female							
#Stomach, Forestomach: Sarcoma															
		0/50	(0%)	0/50	(0%)	1/50	(2%)			0/50	(0%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)							0/50	(0%)				
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	Total	0/200	(0%)	Mean	0%	SD	0%	
#Stomach, Forestomach: Squamous Cell Carcinoma															
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)							0/50	(0%)				
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total	0/200	(0%)	Mean	0%	SD	0%	
#Stomach, Forestomach: Squamous Cell Carcinoma or Papilloma Squamous															
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	1/50	(2%)	0/50	(0%)
		0/50	(0%)							0/50	(0%)				
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	
#Stomach, Forestomach: Squamous Cell Papilloma															
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	1/50	(2%)	0/50	(0%)
		0/50	(0%)							0/50	(0%)				
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total	1/200	(0.5%)	Mean	0.5%	SD	1%	
#Stomach, Glandular: Fibrosarcoma															
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)							0/50	(0%)				
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total	0/200	(0%)	Mean	0%	SD	0%	

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

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Report Date: 08/04/2016

Male														Female					
#Stomach, Glandular: Leiomyosarcoma																			
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)	1/50	(2%)				
		0/50	(0%)							0/50	(0%)								
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%		Total	1/200	(0.5%)	Mean	0.5%	SD	1%				
#Stomach, Glandular: Sarcoma																			
		0/50	(0%)	0/50	(0%)	1/50	(2%)			0/50	(0%)	0/50	(0%)	0/50	(0%)				
		0/50	(0%)							0/50	(0%)								
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%		Total	0/200	(0%)	Mean	0%	SD	0%				
#Testes: Adenoma																			
		6/50	(12%)	3/50	(6%)	2/50	(4%)												
		0/50	(0%)																
Overall Incidence	Total	11/200	(5.5%)	Mean	5.5%	SD	5%												
#Testes: Hemangiosarcoma																			
		1/50	(2%)	0/50	(0%)	0/50	(0%)												
		0/50	(0%)																
Overall Incidence	Total	1/200	(0.5%)	Mean	0.5%	SD	1%												
#Thymus: Sarcoma																			
		0/41	(0%)	0/47	(0%)	0/40	(0%)			0/46	(0%)	0/49	(0%)	0/48	(0%)				
		0/48	(0%)							0/48	(0%)								
Overall Incidence	Total	0/176	(0%)	Mean	0%	SD	0%		Total	0/191	(0%)	Mean	0%	SD	0%				

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

Male														Female					
*Thymus: Thymoma Benign																			
		3/41 (7%) 3/48 (6%)		1/47 (2%)		1/40 (3%)				6/46 (13%) 8/48 (17%)		0/49 (0%)		5/48 (10%)					
Overall Incidence	Total	8/176 (4.55%)		Mean 4.55%		SD 2.62%		Total		19/191 (9.95%)		Mean 10.03%		SD 7.16%					
*Thymus: Thymoma: Benign, Malignant, NOS																			
		3/41 (7%) 3/48 (6%)		1/47 (2%)		1/40 (3%)				6/46 (13%) 8/48 (17%)		0/49 (0%)		5/48 (10%)					
Overall Incidence	Total	8/176 (4.55%)		Mean 4.55%		SD 2.62%		Total		19/191 (9.95%)		Mean 10.03%		SD 7.16%					
*Thyroid Gland: Carcinoma																			
		0/50 (0%) 0/50 (0%)		0/50 (0%)		0/50 (0%)				1/50 (2%) 0/49 (0%)		0/50 (0%)		0/50 (0%)					
Overall Incidence	Total	0/200 (0%)		Mean 0%		SD 0%		Total		1/199 (0.5%)		Mean 0.5%		SD 1%					
*Thyroid Gland: C-Cell: Adenoma																			
		5/50 (10%) 3/50 (6%)		6/50 (12%)		7/50 (14%)				4/50 (8%) 7/49 (14%)		2/50 (4%)		3/50 (6%)					
Overall Incidence	Total	21/200 (10.5%)		Mean 10.5%		SD 3.42%		Total		16/199 (8.04%)		Mean 8.07%		SD 4.45%					
*Thyroid Gland: C-Cell: Carcinoma																			
		1/50 (2%) 0/50 (0%)		0/50 (0%)		0/50 (0%)				1/50 (2%) 0/49 (0%)		1/50 (2%)		0/50 (0%)					
Overall Incidence	Total	1/200 (0.5%)		Mean 0.5%		SD 1%		Total		2/199 (1.01%)		Mean 1%		SD 1.15%					

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

		Male				Female					
*Thyroid Gland: C-Cell: Carcinoma or Adenoma											
		6/50 (12%) 3/50 (6%)		6/50 (12%)		7/50 (14%)		5/50 (10%) 7/49 (14%)		3/50 (6%)	3/50 (6%)
Overall Incidence	Total	22/200 (11%)	Mean	11%	SD	3.46%	Total	18/199 (9.05%)	Mean	9.07%	SD 3.95%
*Thyroid Gland: Follicular Cell: Adenoma											
		0/50 (0%) 0/50 (0%)		2/50 (4%)		1/50 (2%)		1/50 (2%) 0/49 (0%)		2/50 (4%)	1/50 (2%)
Overall Incidence	Total	3/200 (1.5%)	Mean	1.5%	SD	1.91%	Total	4/199 (2.01%)	Mean	2%	SD 1.63%
*Thyroid Gland: Follicular Cell: Carcinoma											
		0/50 (0%) 0/50 (0%)		0/50 (0%)		0/50 (0%)		1/50 (2%) 1/49 (2%)		0/50 (0%)	1/50 (2%)
Overall Incidence	Total	0/200 (0%)	Mean	0%	SD	0%	Total	3/199 (1.51%)	Mean	1.51%	SD 1.01%
*Thyroid Gland: Follicular Cell: Carcinoma or Adenoma											
		0/50 (0%) 0/50 (0%)		2/50 (4%)		1/50 (2%)		2/50 (4%) 1/49 (2%)		2/50 (4%)	2/50 (4%)
Overall Incidence	Total	3/200 (1.5%)	Mean	1.5%	SD	1.91%	Total	7/199 (3.52%)	Mean	3.51%	SD 0.98%
*Urinary Bladder: Carcinoma or Papilloma											
		0/50 (0%) 0/50 (0%)		0/50 (0%)		0/50 (0%)		0/50 (0%) 0/50 (0%)		0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/200 (0%)	Mean	0%	SD	0%	Total	0/200 (0%)	Mean	0%	SD 0%

#: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied

Version: Aug2016
Contract/Lab: All Laboratories
Species: RATS
Strain: Wistar-Han
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

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Male												Female			
*Urinary Bladder: Papilloma															
		0/50	(0%)	0/50	(0%)	0/50	(0%)			0/50	(0%)	0/50	(0%)	0/50	(0%)
		0/50	(0%)							0/50	(0%)				
Overall Incidence	Total	0/200	(0%)	Mean	0%	SD	0%	Total		0/200	(0%)	Mean	0%	SD	0%
.....															
#Uterus: Adenoma															
										0/50	(0%)	0/50	(0%)	0/50	(0%)
										1/50	(2%)				
Overall Incidence								Total		1/200	(0.5%)	Mean	0.5%	SD	1%
.....															
#Uterus: Carcinoma															
										3/50	(6%)	2/50	(4%)	1/50	(2%)
										1/50	(2%)				
Overall Incidence								Total		7/200	(3.5%)	Mean	3.5%	SD	1.91%
.....															
#Uterus: Granular Cell Tumor Benign															
										0/50	(0%)	0/50	(0%)	0/50	(0%)
										1/50	(2%)				
Overall Incidence								Total		1/200	(0.5%)	Mean	0.5%	SD	1%
.....															
#Uterus: Hemangiosarcoma															
										1/50	(2%)	0/50	(0%)	0/50	(0%)
										0/50	(0%)				
Overall Incidence								Total		1/200	(0.5%)	Mean	0.5%	SD	1%
.....															

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Aug2016
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: Wistar-Han
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

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	Male			Female		
#Uterus:						
Leiomyosarcoma						
		1/50 (2%)		0/50 (0%)		0/50 (0%)
		0/50 (0%)				
Overall Incidence	Total	1/200 (0.5%)		Mean 0.5%		SD 1%
#Uterus:						
Malignant Mixed Mullerian Tumor						
		0/50 (0%)		0/50 (0%)		0/50 (0%)
		0/50 (0%)				
Overall Incidence	Total	0/200 (0%)		Mean 0%		SD 0%
#Uterus:						
Polyp Stromal						
		2/50 (4%)		9/50 (18%)		5/50 (10%)
		6/50 (12%)				
Overall Incidence	Total	22/200 (11%)		Mean 11%		SD 5.77%
#Uterus:						
Sarcoma Stromal						
		1/50 (2%)		1/50 (2%)		2/50 (4%)
		1/50 (2%)				
Overall Incidence	Total	5/200 (2.5%)		Mean 2.5%		SD 1%
#Uterus:						
Sarcoma Stromal or Polyp Stromal						
		3/50 (6%)		10/50 (20%)		6/50 (12%)
		7/50 (14%)				
Overall Incidence	Total	26/200 (13%)		Mean 13%		SD 5.77%

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Aug2016
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: Wistar-Han
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
Route: INHALATION
Vehicle: AIR

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	Male				Female			
#Uterus:								
Schwannoma Malignant								
			0/50 (0%)		1/50 (2%)		0/50 (0%)	
			2/50 (4%)					
Overall Incidence	Total	3/200 (1.5%)		Mean	1.5%		SD	1.91%
#Uterus:								
Squamous Cell Papilloma								
			0/50 (0%)		0/50 (0%)		1/50 (2%)	
			0/50 (0%)					
Overall Incidence	Total	1/200 (0.5%)		Mean	0.5%		SD	1%
#Vagina:								
Fibrosarcoma								
			0/50 (0%)		0/50 (0%)		0/50 (0%)	
			1/50 (2%)					
Overall Incidence	Total	1/200 (0.5%)		Mean	0.5%		SD	1%
#Vagina:								
Leiomyoma								
			0/50 (0%)		0/50 (0%)		0/50 (0%)	
			0/50 (0%)					
Overall Incidence	Total	0/200 (0%)		Mean	0%		SD	0%
#Vagina:								
Polyp								
			0/50 (0%)		0/50 (0%)		0/50 (0%)	
			0/50 (0%)					
Overall Incidence	Total	0/200 (0%)		Mean	0%		SD	0%

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Length of Study: CHRONIC

Vehicle: AIR

Report Date: 08/04/2016

Male														Female					
#Zymbal's Gland: Carcinoma																			
		0/50 (0%)		0/50 (0%)		2/50 (4%)				0/50 (0%)		0/50 (0%)		0/50 (0%)					
		1/50 (2%)								0/50 (0%)									
Overall Incidence	Total	3/200 (1.5%)		Mean	1.5%	SD	1.91%	Total	0/200 (0%)		Mean	0%	SD	0%					
.....																			
#Zymbal's Gland: Carcinoma or Adenoma																			
		0/50 (0%)		0/50 (0%)		2/50 (4%)				0/50 (0%)		0/50 (0%)		0/50 (0%)					
		1/50 (2%)								0/50 (0%)									
Overall Incidence	Total	3/200 (1.5%)		Mean	1.5%	SD	1.91%	Total	0/200 (0%)		Mean	0%	SD	0%					

#: Denominator is number of animals necropsied